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# NATIONAL COMMUNICATIONS

# COMMUNICATIONS FROM PARTIES INCLUDED IN ANNEX I TO THE CONVENTION

## Updated information on greenhouse gas emissions and projections

## Note by the secretariat

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# I. INTRODUCTION

## A. Mandate

1. The Conference of the Parties, at its second session (COP 2), by its decision 9/CP.2,[1] requested Annex I Parties to submit their second national communication by 15 April 1997. For those Parties which were due to submit the first communication in 1996, an update of this communication was to be submitted by the same date; second national communications by Parties with economies in transition should in principle be submitted not later than 15 April 1998. National inventory data on emissions by sources and removals by sinks are to be submitted on an annual basis by 15 April of each year. By the same decision, COP 2 requested the secretariat to prepare the documentation on the results of the review of second national communications, including compilation and synthesis and/or other reports, according to schedules to be adopted by the subsidiary bodies. A first compilation and synthesis of second national communications from Annex I Parties should be available for consideration by the Conference of the Parties at its third session.

2. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its fifth session, *inter alia*, requested the secretariat to prepare an initial compilation and synthesis by the seventh session of the SBSTA of all communications received by 15 April 1997 (see document FCCC/SBSTA/1997/4).

## B. Scope of the note

3. The present note compiles, in a preliminary manner, the latest available **numerical data** on greenhouse gas inventories and projections drawn from both first and second national communications as well as from in-depth review reports and annual inventory submissions, where appropriate. Thus this note is not to be regarded as a compilation and synthesis report, since no discussion or conclusions are contained in the note, but rather as a presentation of the most recent information on the actual trends in greenhouse gas emissions for the years 1990-1995 and projections for the year 2000 and up to 2020 as reported by Annex I Parties. It was felt that this information may be helpful as reference data to be taken into account in the Berlin Mandate process. An initial compilation and synthesis of second national communications containing the late submissions will be prepared for consideration at the seventh sessions of the subsidiary bodies as requested by the SBSTA at its fifth session.

## C. Possible action by the subsidiary bodies

4. No action is envisaged by the subsidiary bodies in relation to this note.

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[1] For decisions adopted by the Conference of the Parties at its second session, see document FCCC/CP/1996/15/Add.1

## II. TABLES OF INVENTORIES OF ANTHROPOGENIC EMISSIONS AND REMOVALS IN 1990-95 AND PROJECTED ANTHROPOGENIC EMISSIONS UP TO THE YEAR 2020

### A. General notes

5. Data on inventories of emissions and removals as well as data on projections are included in the tables below. The purpose of these tables is to present in as much a consistent and comparable fashion as possible the latest available inventory and projections data. However, it should be borne in mind that part of the information presented in these tables is provisional and has not been subject to a technical analysis and review by experts. The data provided by the Parties will be further reviewed and analysed for incorporation in the first compilation and synthesis of second national communications from Annex I Parties.

6. In some cases, the figures presented differ from those in the second compilation and synthesis report of first national communications (FCCC/CP/1996/12 and Add.1 and 2) or from first national communications as originally submitted. This is mainly due to the fact that all Parties when submitting their second national communication or the latest inventory data have revised their earlier estimates. These revised estimates are marked in the tables in *italics*.

7. Footnotes to the tables were kept to a minimum. It should be noted that the footnotes to the tables contained in the second compilation and synthesis report (FCCC/CP/1996/12 and Add.1 and 2) have not been reproduced in this document.

8. The tables comprise estimates provided by all Annex I Parties. At the time of writing the secretariat received second national communications from eleven Annex I Parties, namely Canada, Finland, France, Germany, Ireland, Netherlands, New Zealand, Norway, Sweden, Switzerland and the United Kingdom, as well as from Monaco[2]. Data for Belgium contained in its first communication have also been included in the tables since the communication was received by the secretariat after publication of the second compilation and synthesis report. Some Parties (Hungary, Japan, Latvia, Russian Federation and Slovakia) made available to the secretariat greenhouse gas inventories (in some cases advance or preliminary ones); these data have been taken into account in this note. In a number of cases updated information made available by Parties to the review teams during the in-depth reviews of their first communication have also been included in the tables.

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[2] Monaco notified the Depositary of its intention to be bound by subparagraphs (a) and (b) of Article 4.2.

## B. Explanatory notes to the tables

9. Blanks in the tables signify an absence of quantitative information. The secretariat has chosen to leave the spaces blank in order not to complicate the reading of the tables. The figure "zero" appears in the tables only when reported as such by the Parties.

References to "guidelines" are to document FCCC/CP/1996/15/Add.1, decision 9/CP.2, annex to this decision entitled "Revised guidelines for the preparation of national communications by Parties included in Annex I to the Convention".

When converting units of mass for non-$CO_2$ gases into carbon dioxide-equivalent terms, global warming potentials (GWP) over a 100-year time horizon provided by the Intergovernmental Panel on Climate Change (IPCC) in its Second Assessment Report (1995) have been used unless otherwise indicated.

The following chemical symbols have been used:

| | |
|---|---|
| $CF_4$ | Tetrafluoromethane |
| CFCs | Chlorofluorocarbons |
| $C_2F_6$ | Hexafluoroethane |
| $CH_4$ | Methane |
| CO | Carbon monoxide |
| $CO_2$ | Carbon dioxide |
| HCFCs | Hydrochlorofluorocarbons |
| HFCs | Hydrofluorocarbons |
| $N_2O$ | Nitrous oxide |
| $NO_x$ | Nitrogen oxides |
| NMVOCs | Non-methane volatile organic compounds |
| PFCs | Perfluorocarbons |
| $SF_6$ | Sulphur hexafluoride |
| VOCs | Volatile organic compounds |

The following weights have been used:

| | |
|---|---|
| Gg | Gigagrams ($10^9$ grams) |

**Table A.1 Anthropogenic $CO_2$ emissions, excluding land-use change and forestry[a], 1990 and 1994 (Gigagrams and percentage of total by Party)**

| | Energy[b] | | | | Industrial Processes | | | | Other[c] | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | | 1994 | | 1990 | | 1994 | | 1990 | | 1994 | | 1990 | 1994 |
| | (Gg) | % | (Gg) | % | (Gg) | % | (Gg) | % | (Gg) | % | (Gg) | % | (Gg) | (Gg) |
| *Australia* | 266 468 | 97.6 | 278 208 | 97.4 | 6 655 | 2.4 | 7 293 | 2.6 | | | | | 273 123 | 285 501 |
| Austria | 57 100 | 96.5 | | | 2 100 | 3.5 | | | | | | | 59 200 | |
| *Belgium* | 103 234 | 91.0 | 108 843 | 90.4 | 9 188 | 8.1 | 10 456 | 8.7 | 983 | 0.9 | 1 093 | 0.9 | 113 405 | 120 392 |
| *Bulgaria (1990)* | 76 113 | 92.4 | 54 317 | 93.9 | 5 538 | 6.7 | 2 916 | 5.0 | 721 | 0.9 | 631 | 1.1 | 82 372 | 57 864 |
| Bulgaria (1998)[d] | 90 327 | 93.2 | | | 5 890 | 6.1 | | | 661 | 0.7 | . | | 96 878 | |
| *Canada* | 433 620 | 93.5 | 453 100 | 94.0 | 21 800 | 4.7 | 25 100 | 5.2 | 7 781 | 1.7 | 4 218 | 0.9 | 464 000 | 482 000 |
| *Czech Republic* | 160 073 | 96.7 | | | 5 417 | 3.3 | | | | | | | 165 490 | |
| Denmark | 50 997 | 98.0 | 61 805 | 97.9 | 1 028 | 2.0 | 1 327 | 2.1 | | | 0 | 0.0 | 52 025 | 63 132 |
| Estonia | 37 184 | 98.4 | 21 413 | 99.0 | 613 | 1.6 | 215 | 1.0 | | | 0 | 0.0 | 37 797 | 21 628 |
| *Finland* | 52 700 | 98.0 | 58 420 | 98.6 | 1 200 | 2.2 | 840 | 1.4 | | | 0 | 0.0 | 53 800 | 59 250 |
| *France* | 356 691 | 94.3 | 353 277 | 94.7 | 16 638 | 4.4 | 14 335 | 3.8 | 5 050 | 1.3 | 5 473 | 1.5 | 378 379 | 373 085 |
| *Germany* | 986 640 | 97.3 | 879 300 | 97.2 | 27 515 | 2.7 | 25 200 | 2.8 | | | | | 1 014 155 | 904 500 |
| Greece | 76 210 | 92.8 | | | 5 890 | 7.2 | | | | | | | 82 100 | |
| *Hungary (1990)* | 68 105 | 95.0 | 57 046 | 96.4 | 3 568 | 5.0 | 1 397 | 2.4 | | | 754 | 1.3 | 71 673 | 59 196 |
| Hungary (1985-87)[d] | 80 089 | 95.7 | | | 3 587 | 4.3 | | | | | | | 83 676 | |
| *Iceland* | 1 753 | 81.6 | 1 852 | 81.7 | 391 | 18.2 | 409 | 18.0 | 5 | 0.2 | 5 | 0.2 | 2 147 | 2 265 |
| *Ireland* | 29 038 | 94.5 | 31 443 | 94.4 | 1 627 | 5.3 | 1 827 | 5.5 | 54 | 0.2 | 54 | 0.2 | 30 719 | 33 324 |
| Italy | 401 350 | 93.6 | | | 27 591 | 6.4 | | | | | | | 428 941 | |
| *Japan* | 1 052 964 | 93.6 | 1 133 291 | 93.5 | 58 795 | 5.2 | 61 303 | 5.1 | 12 773 | 1.1 | 17 416 | 1.4 | 1 124 532 | 1 211 740 |
| *Latvia* | 22 606 | 98.4 | | | 371 | 1.6 | | | | | | | 22 976 | |
| Luxembourg | 10 626 | 93.7 | | | 585 | 5.2 | | | 132 | 1.2 | | | 11 343 | |
| *Monaco* | 0 | 0.0 | | | | | | | 71 | 100.0 | | | 71 | |
| *Netherlands* | 164 800 | 98.4 | 172 300 | 98.3 | 1 850 | 1.1 | 2 000 | 1.1 | 900 | 0.5 | 900 | 0.5 | 167 550 | 175 200 |
| *New Zealand* | 23 089 | 90.6 | 24 655 | 90.2 | 2 387 | 9.4 | 2 671 | 9.8 | | | | | 25 476 | 27 326 |
| *Norway* | 28 698 | 80.7 | 30 834 | 81.6 | 6 514 | 18.3 | 6 615 | 17.5 | 333 | 0.9 | 335 | 0.9 | 35 544 | 37 785 |
| Poland (1990) | 465 281 | 97.2 | | | 13 599 | 2.8 | | | | | | | 414 930 | |
| Poland (1988)[d] | 38 686 | 91.8 | 42 055 | 91.0 | 3 462 | 8.2 | 4 157 | 9.0 | | | | | 478 880 | |
| *Portugal* | | | | | | | | | | | | | 42 148 | 46 212 |
| Romania (1990)[e] | 198 472 | 99.9 | | | | | | | 7 | 0.0 | | | 171 103 | |
| Romania (1989)[d,f] | 2 334 120 | 98.3 | 1 614 800 | 98.9 | 41 471 | 1.7 | 18 717 | 1.1 | | | | | 198 479 | |
| *Russian Federation* | 56 585 | 94.3 | 40 389 | 92.9 | 3 447 | 5.7 | 3 065 | 7.1 | | | | | 2 375 591 | 1 633 517 |
| *Slovakia* | 209 425 | 92.1 | | | 17 696 | 7.8 | | | 201 | 0.1 | | | 60 032 | 43 454 |
| Spain | 51 382 | 92.7 | 53 920 | 92.2 | 3 787 | 6.8 | 4 200 | 7.2 | 276 | 0.5 | 200 | 0.3 | 227 322 | |
| *Sweden* | 40 386 | 89.6 | 39 272 | 90.6 | 3 363 | 7.5 | 2 730 | 6.3 | 1 320 | 2.9 | 1 340 | 3.1 | 55 445 | 58 500 |
| *Switzerland* | 569 813 | 98.2 | 542 689 | 98.4 | 9 911 | 1.7 | 8 373 | 1.5 | 513 | 0.1 | 513 | 0.1 | 45 070 | 43 340 |
| *United Kingdom* | 4 901 992 | 98.9 | 5 103 000 | 99.5 | 55 030 | 1.1 | 23 083 | 0.5 | | | | | 580 237 | 551 574 |
| United States | | | | | | | | | | | | | 4 957 022 | 5 126 084 |
| **Total[g]** | **12 662 447** | **97.1** | **11 156 228** | **97.7** | **345 427** | **2.6** | **228 229** | **2.0** | **31 113** | **0.2** | **32 932** | **0.3** | **13 625 718** | **11 416 869** |

[a] In light of the different ways of reporting used by Parties, emissions from land-use change and forestry were excluded from the table for comparison and consistency purposes, however are presented in Table A.2

[b] Includes fuel combustion and fugitive fuel emissions

[c] Includes emissions from solvent use, agriculture and waste.

[d] Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990, Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

[e] Party did not provide inventory data according to IPCC reporting format. Estimate calculated by the secretariat using the per capita emissions and population figures provided by Party

[f] An estimate of 9,244 Gg of emissions from industrial processes was reported but not included to avoid double counting, as the Party included these emissions in fuel combustion (industry)

[g] The percentage of the total accounted for by each category have been calculated on the basis of the overall total with the exclusion of Poland and Romania since data for the individual categories for these Parties were not included in the table. The emissions for non-1990 base years were also not taken into account in the overall total or total percentages for categories

**Table A.2** **Anthropogenic $CO_2$ emissions and removals[a] from land-use change and forestry and impact on total $CO_2$ emissions, 1990 and 1994 or 1995[b], (Gigagrams)**

| | Land-use change and forestry, net emissions or removals | | National $CO_2$ emissions excluding land-use change and forestry | | National $CO_2$ emissions including land-use change and forestry | | Percentage reduction or increase (-/+) of national $CO_2$ emissions taking into account land-use change and forestry | |
|---|---|---|---|---|---|---|---|---|
| | 1990 (Gg) | 1994 / 1995 (Gg) | 1990 (Gg) | 1994 / 1995 (Gg) | 1990 (Gg) | 1994 / 1995 (Gg) | 1990 % | 1994 / 1995 % |
| *Australia*[c] | *121 688* | *-27 512* | *273 123* | *285 501* | *394 811* | *257 989* | *45* | *-10* |
| Austria | -15 000 | | 59 200 | | 44 200 | | -25 | |
| *Belgium* | -2 057 | -2 057 | 113 405 | 120 392 | 111 348 | 118 335 | - -2 | -2 |
| *Bulgaria (1990)* | *-5 801* | *-6 941* | *82 372* | *57 864* | *76 571* | *50 923* | *-7* | *-12* |
| Bulgaria (1988)[d] | -4 657 | -6 941 | 96 878 | 57 864 | 92 221 | 50 923 | -5 | -12 |
| *Canada* | *-2 281* | *-5 454* | *165 490* | *128 817* | *163 209* | *123 363* | *-1* | *1* |
| *Czech Republic* | -2 600 | | 52 025 | | 49 425 | | -5 | |
| Denmark | 1 796 | 1 646 | 37 797 | 21 628 | 39 593 | 23 274 | 5 | 8 |
| Estonia | (-30 000)- (-19 000) | (-14 000) - (-7 000) | 53 800 | 59 250 | 23 800 - 34 800 | 46 250-52 250 | (-56) - (-35) | (-22) - (-12) |
| *Finland*[e] | -33 218 | -46 801 | 378 379 | 385 347 | 345 161 | 338 546 | -9 | -12 |
| *France* | -30 000 | -30 000 | 1 014 155 | 894 500 | 984 155 | 864 500 | -3 | -3 |
| *Germany* | | | | | | | | |
| Greece | -4 467 | -4 820 | 71 673 | 59 196 | 67 206 | 54 376 | -6 | -8 |
| *Hungary (1990)* | -3 097 | -4 820 | 83 676 | 59 196 | 80 579 | 54 376 | -4 | -8 |
| *Hungary (1985-87)*[d] | | | | | | | | |
| *Iceland* | -5 160 | -6 230 | 30 719 | 33 931 | 25 559 | 27 701 | -17 | -18 |
| *Ireland* | -36 730 | | 428 941 | | 392 211 | | -9 | |
| Italy | -83 341 | -94 619 | 1 124 532 | 1 218 377 | 1 041 191 | 1 123 758 | -7 | -8 |
| *Japan* | -14 300 | -15 831 | 22 976 | 11 267 | 8 676 | -4 564 | -62 | -141 |
| *Latvia* | | | | | | | | |
| Luxembourg | -1 500 | -1 700 | 167 550 | 183 400 | 166 050 | 181 700 | -1 | -1 |
| *Netherlands* | -20 569 | -13 487 | 25 476 | 27 367 | 4 907 | 13 880 | -81 | -49 |
| *New Zealand* | -10 200 | -13 637 | 35 544 | 37 880 | 25 344 | 24 243 | -29 | -36 |
| *Norway* | | | | | | | | |
| Poland (1990) | -1 408 | | 478 880 | | 477 472 | | | |
| Poland (1988)[d] | | | | | | | | |
| *Portugal* | | | | | | | | |
| Romania (1990) | -2 925 | | 198 479 | | 195 554 | | -1 | |
| Romania (1989)[d] | *-392 690* | *-568 850* | *2 375 591* | *1 633 517* | *1 982 901* | *1 064 667* | *-17* | *-35* |
| *Russian Federation* | -4 257 | -5 118 | 60 032 | 48 516 | 55 775 | 43 398 | -7 | -11 |
| *Slovakia* | -23 166 | | 227 322 | | 204 156 | | -10 | |
| Spain | -34 368 | | 55 445 | | 21 077 | | -62 | |
| *Sweden* | -4 360 | -5 100 | 45 070 | 44 170 | 40 710 | 39 070 | -10 | -12 |
| *Switzerland* | 20 240 | 12 540 | 580 237 | 551 574 | 600 477 | 564 114 | 3 | 2 |
| *United Kingdom*[e] | -436 000 | -458 000 | 4 957 022 | 5 126 084 | 4 521 022 | 4 668 084 | -9 | -9 |
| United States | | | | | | | | |

[a] Negative values in Gg denote removal of CO2. Positive values denote a net source of emissions

[b] Estimates for Australia, Belgium, Bulgaria, Estonia, Hungary, Russia, United Kingdom and United States are for 1994

[c] The 1990 estimate includes emissions from forest and grassland conversion of 152,062 Gg. Emissions from forest and grassland conversion were not estimated for 1994

[d] Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990. Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

[e] The estimates include emissions and removals from wetland drainage and peat extraction

**Table A.3.1 Total anthropogenic $CO_2$ emissions, excluding land-use change and forestry, 1990 - 1995 (Gigagrams and percentage)**

| | Percentage relative to 1990, 1990=100 | | | | | Last Reported Value | |
|---|---|---|---|---|---|---|---|
| | 1990 (Gg) | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *273 123* | *101* | *102* | *103* | *105* | | *285 501* | |
| Austria | 59 200 | 108 | 100 | | | | | |
| *Belgium* | *113 405* | *105* | *104* | *101* | *106* | | *120 392* | |
| *Bulgaria (1990)* | *82 372* | *78* | *72* | *74* | *70* | | *57 864* | |
| Bulgaria (1988)[a] | 96 878 | 67 | 61 | 63 | 60 | | 57 864 | |
| *Canada* | *464 000* | *98* | *101* | *101* | *104* | *108* | | *499 526* |
| *Czech Republic* | *165 490* | *93* | *85* | *81* | | *78* | | *128 817* |
| Denmark | 52 025 | 121 | 110 | 114 | 121 | | 63 132 | |
| Estonia | 37 797 | 97 | 73 | 55 | 57 | | 21 628 | |
| *Finland* | *53 800* | *0* | *97* | *99* | *110* | *104* | | *56 050* |
| *France* | *378 379* | *106* | *106* | *99* | *99* | *102* | | *385 347* |
| *Germany* | *1 014 155* | *96* | *91* | *91* | *89* | *88* | | *894 500* |
| Greece | 82 100 | | | | | | | |
| *Hungary (1990)*[b] | *71 673* | *94* | *84* | *85* | *83* | | *59 196* | |
| Hungary (1985-87)[a,b] | 83 676 | 81 | 72 | 73 | 71 | | 59 196 | |
| *Iceland* | *2 147* | *96* | *102* | *107* | *105* | *106* | | *2 282* |
| *Ireland* | *30 719* | *103* | *105* | *104* | *108* | *110* | | *33 931* |
| Italy | 428 941 | | | | | | | |
| *Japan* | *1 124 532* | *102* | *103* | *101* | *108* | *108* | | *1 218 377* |
| *Latvia* | *22 976* | | | | | *49* | | *11 267* |
| Luxembourg | 11 343 | | | | | | | |
| *Monaco* | *71* | | | | | | | |
| *Netherlands* | *167 550* | *104* | *103* | *105* | *105* | *109* | | *183 400* |
| *New Zealand* | *25 476* | *102* | *110* | *107* | *107* | *107* | | *27 367* |
| *Norway* | *35 544* | *95* | *97* | *101* | *106* | *107* | | *37 880* |
| Poland (1990) | 414 930 | 96 | 90 | | | | | |
| Poland (1988)[a] | 478 880 | 83 | 78 | | | | | |
| *Portugal* | *42 148* | *106* | *118* | *112* | *110* | | *46 212* | |
| Romania (1990)[a] | 171 103 | 83 | 72 | 70 | | | | |
| Romania (1989) | 198 479 | 71 | 62 | 61 | | | | |
| *Russian Federation* | *2 375 591* | | | | *69* | | *1 633 517* | |
| *Slovakia* | *60 032* | *88* | *81* | *77* | *72* | *81* | | *48 516* |
| Spain | 227 322 | | | | | | | |
| *Sweden* | *55 445* | *100* | *101* | *101* | *106* | *105* | | *58 108* |
| *Switzerland* | *45 070* | *104* | *101* | *98* | *96* | *98* | | *44 170* |
| *United Kingdom* | *580 237* | *101* | *98* | *96* | *95* | | *551 574* | |
| United States | 4 957 022 | 99 | 100 | 103 | 103 | | 5 126 084 | |

[a] Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

[b] The estimates for the base year and 1990 do not include emissions from waste while emissions from waste of 754 Gg annually are included in subsequent years.

**Table A.3.2 $CO_2$ emissions from fuel combustion, 1990 - 1995 (Gigagrams and percentage)**

| | | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 (Gg) | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *262 623* | *101* | *102* | *103* | *104* | | *273 934* | |
| Austria | 57 100 | 108 | 100 | | | | | |
| *Belgium* | *103 234* | *105* | *104* | *101* | *105* | | *108 843* | |
| Bulgaria (1990) | 76 113 | 79 | 73 | 76 | 71 | | 54 317 | |
| Bulgaria (1988)* | 90 327 | 67 | 61 | 64 | 60 | | 54 317 | |
| *Canada* | *426 000* | *98* | *101* | *101* | *104* | *108* | | *460 886* |
| *Czech Republic* | *160 073* | *93* | *85* | *82* | | *78* | | *124 647* |
| Denmark | 50 997 | 121 | 109 | 113 | 121 | | 61 805 | |
| Estonia | 37 184 | 98 | 74 | 56 | 58 | | 21 413 | |
| *Finland* | *52 600* | | *98* | *99* | *111* | *105* | | *55 130* |
| *France* | *356 259* | *106* | *105* | *100* | *98* | *100* | | *356 588* |
| *Germany* | *986 640* | *96* | *91* | *91* | *89* | *88* | | *869 300* |
| Greece | 76 210 | | | | | | | |
| *Hungary (1990)* | *68 105* | *96* | *86* | *86* | *84* | | 57 046 | |
| Hungary (1985-87)* | 80 089 | 81 | 73 | 73 | 71 | | 57 046 | |
| *Iceland* | *1 674* | *97* | *105* | *108* | *106* | *106* | | *1 774* |
| *Ireland* | *29 038* | *103* | *105* | *104* | *108* | *111* | | *32 109* |
| Italy | 401 350 | | | | | | | |
| *Japan* | *1 052 964* | *102* | *103* | *101* | *108* | *108* | | *1 138 478* |
| *Latvia* | *22 606* | | | | | *49* | | *11 163* |
| Luxembourg | 10 626 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *164 800* | *104* | *103* | *105* | *105* | *109* | | *180 400* |
| *New Zealand* | *22 474* | *101* | *110* | *106* | *107* | *107* | | *24 004* |
| *Norway* | *26 938* | *97* | *100* | *104* | *109* | *107* | | *28 854* |
| Poland (1990) | 465 229 | | 78 | | | | | |
| Poland (1988)* | *38 686* | *105* | *119* | *111* | *109* | | *42 053* | |
| *Portugal* | | | | | | | | |
| Romania | 198 472 | | | | | | | |
| Romania (1989)* | *2 334 120* | | | | *69* | | *1 614 860* | |
| *Russian Federation* | *56 585* | *88* | *81* | *77* | *71* | *80* | | *45 426* |
| *Slovakia* | 209 012 | | | | | | | |
| Spain | *51 329* | *100* | *101* | *101* | *105* | *104* | | *53 385* |
| *Sweden* | *40 330* | *105* | *102* | *99* | *97* | *100* | | *40 130* |
| *Switzerland* | *562 522* | *101* | *99* | *96* | *95* | | 534 123 | |
| *United Kingdom* | 4 895 432 | 99 | 100 | 103 | 104 | | 5 098 000 | |
| United States | | | | | | | | |

* Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

**Table A.3.3 $CO_2$ emissions from transport, 1990 - 1995 (Gigagrams and percentage)**

| | | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 (Gg) | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *59 596* | *99* | *101* | *103* | *105* | | *62 689* | |
| Austria | 16 200 | 109 | 109 | | | | | |
| *Belgium* | *20 018* | *102* | *110* | *110* | *112* | | *22 473* | |
| *Bulgaria (1990)* | *11 756* | *58* | *60* | *70* | *61* | | *7 179* | |
| Bulgaria (1988)* | 10 753 | 64 | 65 | 76 | 67 | | 7179 | |
| *Canada* | *140 000* | *96* | *97* | *99* | *105* | *107* | | *150 453* |
| *Czech Republic* | *7 959* | *86* | *102* | *104* | | *112* | | *8 912* |
| Denmark | 10 491 | 106 | 106 | 109 | 113 | | 11 887 | |
| Estonia | 2 656 | | | | | | | |
| *Finland* | *11 500* | | *101* | *96* | *99* | *97* | | *11 130* |
| *France* | *124 921* | *102* | *104* | *104* | *106* | *108* | | *134 623* |
| *Germany* | *158 647* | *102* | *106* | *109* | *106* | *108* | | *170 700* |
| Greece | 14 460 | | | | | | | |
| *Hungary (1990)* | *8 208* | *90* | *88* | *87* | *88* | | *7 212* | |
| Hungary (1985-87)* | 7 741 | 95 | 93 | 92 | 93 | | 7 212 | |
| *Iceland* | *1 376* | *102* | *107* | *110* | *109* | *110* | | *1 521* |
| *Ireland* | *4 885* | *105* | *114* | *113* | *119* | *127* | | *6 209* |
| Italy | 95 624 | | | | | | | |
| *Japan* | *207 431* | *105* | *107* | *108* | *113* | *117* | | *242 123* |
| *Latvia* | *5 661* | | | | | *34* | | *1 926* |
| Luxembourg | 908 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *26 800* | *100* | *104* | *106* | *108* | *112* | | *30 100* |
| *New Zealand* | *8 748* | *100* | *104* | *109* | *117* | *126* | | *10 983* |
| *Norway* | *13 885* | *98* | *99* | *103* | *103* | *105* | | *14 578* |
| Poland (1990) | | | | | | | | |
| Poland (1988)* | 34 792 | | 87 | | | | | |
| *Portugal* | *9 947* | *108* | *119* | *124* | *134* | | *13 369* | |
| Romania (1990) | | | | | | | | |
| Romania (1989)* | 7 893 | | | | | | | |
| *Russian Federation* | | | | | | | | |
| *Slovakia* | *5 168* | *86* | *80* | *78* | *80* | *81* | | *4210* |
| Spain | 60 218 | | | | | | | |
| *Sweden* | *18 650* | *100* | *103* | *99* | *101* | *104* | | *19 341* |
| *Switzerland* | *14 668* | *104* | *100* | *100* | *101* | *99* | | *14 865* |
| *United Kingdom* | *119 255* | *99* | *101* | *102* | *102* | | *121 961* | |
| United States | 1 502 626 | | | | 103 | | 1 551 000 | |

* Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

**Table A.3.4 $CO_2$ emissions from small combustion, 1990 - 1995 (Gigagrams and percentage)**

| | | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 (Gg) | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *12 178* | *101* | *103* | *107* | *108* | | *13 181* | |
| Austria | 12 100 | 116 | 103 | | | | | |
| *Belgium* | *25 861* | *112* | *115* | *112* | *111* | | *28 674* | |
| *Bulgaria (1990)* | *5 378* | *76* | *86* | *77* | *62* | | *3 325* | |
| Bulgaria (1988)* | 8 941 | 46 | 52 | 46 | 37 | | 3 325 | |
| *Canada* | *69 830* | *97* | *101* | *107* | *106* | *107* | | *74 425* |
| *Czech Republic* | *35 948* | *83* | *66* | *64* | | *53* | | *19 039* |
| Denmark | 8 062 | 106 | 101 | 101 | 97 | | 7 826 | |
| Estonia | 1 581 | | | | | | | |
| *Finland* | *7 900* | | *110* | *100* | *105* | *110* | | *8 710* |
| *France* | *99 860* | *110* | *110* | *106* | *101* | *102* | | *101 736* |
| *Germany* | *198 190* | *101* | *93* | *98* | *92* | *94* | | *186 100* |
| Greece | 8 260 | | | | | | | |
| *Hungary (1990)* | *20 877* | *104* | *83* | *84* | *81* | | *16 960* | |
| Hungary (1985-87)* | 23 174 | 94 | 75 | 76 | 73 | | 16 960 | |
| *Iceland* | *49* | *97* | *92* | *89* | *74* | *75* | | *37* |
| *Ireland* | *7 859* | *120* | *118* | *114* | *120* | *118* | | *9 265* |
| Italy | 75 585 | | | | | | | |
| *Japan* | *158 298* | *104* | *107* | *107* | *105* | *112* | | *177 084* |
| *Latvia* | *4 590* | | | | | *45* | | *2 084* |
| Luxembourg | 1 174 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *37 300* | *114* | *106* | *112* | *105* | *109* | | *40 700* |
| *New Zealand* | *2 766* | *95* | *108* | *98* | *105* | *100* | | *2 775* |
| *Norway* | *2 506* | *85* | *76* | *74* | *79* | *75* | | *1 891* |
| Poland (1990) | | | | | | | | |
| Poland (1988)* | 105 287 | | 67 | | | | | |
| *Portugal* | *3 274* | *159* | *165* | *169* | *174* | | *5 696* | |
| Romania (1990) | | | | | | | | |
| Romania (1989)* | | | | | | | | |
| Russian Federation | | | | | | *59* | | *8 090* |
| *Slovakia* | *13 813* | | | | | | | |
| Spain | 25 609 | | | | | | | |
| *Sweden* | *10 672* | *96* | *96* | *94* | *96* | *93* | | *9 903* |
| *Switzerland* | *18 322* | *105* | *104* | *101* | *95* | *100* | | *18 290* |
| *United Kingdom* | *111 377* | *110* | *107* | *110* | *104* | | *116 373* | |
| United States | 551 002 | | | | 109 | | 601 000 | |

* Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

**Table A.4.1 Total anthropogenic $CH_4$ emissions, 1990 - 1995 (Gigagrams and percentage)**

| | 1990 (Gg) | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *5 590* | *95* | *95* | *95* | *95* | | *5 302* | |
| Austria | 603 | | | | | | | |
| *Belgium* | *634* | *99* | *99* | *100* | *100* | | *635* | |
| *Bulgaria (1990)* | *1 380* | *97* | *89* | *81* | *77* | | *1 068* | |
| Bulgaria (1988)[a] | 1 413 | 94 | 87 | 79 | 76 | | | |
| *Canada* | *3 200* | 100 | 103 | 109 | 113 | 117 | | *3 732* |
| *Czech Republic* | *888* | *92* | *86* | *82* | | *83* | | *733* |
| Denmark | 407 | 100 | 100 | 100 | 99 | | 401 | |
| Estonia | 323 | 89 | 70 | 56 | 58 | | 188 | |
| *Finland* | *246* | | 100 | 99 | 100 | 98 | | *241* |
| *France* | *3 017* | 100 | 97 | 97 | 95 | 94 | | *2 844* |
| *Germany* | *5 682* | 92 | 91 | 88 | 85 | 84 | | *4 788* |
| Greece | 343 | | | | | | | |
| *Hungary (1990)*[b] | *545* | | | | | | *776* | |
| Hungary (1985-87)[a b] | 664 | | | | | | *776* | |
| *Iceland* | *23* | *101* | *91* | *92* | *93* | *92* | | *21* |
| *Ireland* | *811* | 98 | 99 | 99 | 99 | 100 | | *812* |
| Italy | 3 901 | | | | | | | |
| *Japan* | *1 575* | 99 | 99 | 99 | 98 | | *1 548* | |
| *Latvia* | *159* | | | | | *65* | | *103* |
| Luxembourg | 24 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *1 104* | 102 | 98 | 97 | 97 | 96 | | *1 063* |
| *New Zealand* | *1 706* | 98 | 95 | 93 | 95 | 96 | | *1 635* |
| *Norway* | *432* | 100 | 101 | 104 | 108 | 109 | | *469* |
| Poland (1990) | 6 100 | | 41 | | | | | |
| Poland (1988)[a] | 3042 | | 81 | | | | | |
| *Portugal* | *227* | *100* | *100* | *100* | *99* | | *225* | |
| Romania (1990) | 1 954 | 88 | 77 | 77 | | | | |
| Romania (1989)[a] | 2 328 | 74 | 65 | 65 | | | | |
| *Russian Federation* | *26 690* | | | | *89* | | *23 880* | |
| *Slovakia* | *409* | 93 | 90 | 81 | 77 | 77 | | *315* |
| Spain | 2 151 | | | | | | | |
| *Sweden* | *324* | 99 | 99 | 99 | 94 | 91 | | *296* |
| *Switzerland* | *244* | 100 | 99 | 99 | 97 | 97 | | *235* |
| *United Kingdom* | *4 402* | 99 | 97 | 92 | 87 | | *3843* | |
| United States | 27 000 | 101 | 101 | 99 | 104 | | 28 171 | |

[a] Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990, Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

[b] Although estimates were reported for the years 1991-1994, it was not possible to present the trends since the estimates for energy-related emissions for the base year and 1990 were not fully consistent with estimates for 1991-1994 and estimates of emissions from waste were only reported for 1991-1994

**Table A.4.2** **$CH_4$ emissions from fugitive fuel, 1990 - 1995 (Gigagrams and percentage)**

| | 1990 (Gg) | Percentage relative to 1990, 1990=100 | | | | | Last Reported Value | |
|---|---|---|---|---|---|---|---|---|
| | | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *1 213* | *98* | *102* | *99* | *100* | | *1 218* | |
| Austria | 92 | | | | | | | |
| *Belgium* | *53* | *93* | *83* | *82* | *84* | | *45* | |
| *Bulgaria (1990)* | *311* | *83* | *78* | *74* | *72* | | *225* | |
| Bulgaria (1988)[a] | 315 | 82 | 77 | 74 | 71 | | 225 | |
| *Canada* | *1 400* | *100* | *107* | *114* | *121* | *128* | | *1 791* |
| *Czech Republic* | *460* | *90* | *87* | *84* | | *88* | | *405* |
| Denmark | 11 | 106 | 105 | 101 | 101 | | 11 | |
| Estonia | 217 | 85 | 64 | 48 | 50 | | 109 | |
| *Finland* | | | | | | | | |
| *France* | *332* | *99* | *98* | *102* | *101* | *100* | | *333* |
| *Germany* | *1 563* | *94* | *93* | *83* | *75* | | *1 170* | |
| Greece | 39 | | | | | | | |
| *Hungary (1990)*[a] | *366* | | | | | | *379* | |
| Hungary (1985-87)[a,b] | 448 | | | | | | *379* | |
| *Iceland* | | | | | | | | |
| *Ireland* | *10* | *95* | *100* | *105* | *105* | *109* | | *11* |
| Italy | 348 | | | | | | | |
| *Japan* | *166* | *103* | *105* | *104* | *102* | | *169* | |
| *Latvia* | *2* | | | | | *58* | | *1* |
| Luxembourg | 2 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *179* | *105* | *91* | *88* | *95* | *95* | | *170* |
| *New Zealand* | *25* | *88* | *89* | *88* | *93* | *110* | | *27* |
| *Norway* | *21* | *105* | *129* | *138* | *143* | *143* | | *30* |
| Poland (1990) | | | | | | | | |
| Poland (1988)[a] | 1 222 | | 65 | | | | | |
| *Portugal* | *2* | *95* | *80* | *80* | | | | |
| Romania (1990) | 0 | | | | | | | |
| Romania (1989)[a] | 1 416 | | | | | | | |
| *Russian Federation* | *18 900* | | | | *91* | | *17 200* | |
| *Slovakia* | *122* | *93* | *84* | *87* | *86* | *87* | | *106* |
| Spain | 695 | | | | | | | |
| *Sweden* | | | | | | | | |
| *Switzerland* | *15* | *99* | *97* | *94* | *91* | *87* | | *13* |
| *United Kingdom* | *1 238* | *100* | *94* | *81* | *65* | | *808* | |
| United States | 7 641 | 99 | 97 | 90 | 100 | | 7 630 | |

[a] Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

[b] Although estimates were reported for the years 1991-1994, it was not possible to present the trends since the estimates for energy-related emissions for the base year and 1990 were not fully consistent with estimates for 1991-1994.

**Table A.4.3 $CH_4$ emissions from agriculture, 1990 - 1995 (Gigagrams and percentage)**

| | | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 (Gg) | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *3 223* | *100* | *98* | *98* | *97* | | *3 141* | |
| Austria | 259 | | | | | | | |
| *Belgium* | *388* | *99* | *99* | *100* | *100* | | *389* | |
| *Bulgaria (1990)* | *258* | *86* | *67* | *53* | *48* | | *124* | |
| Bulgaria (1988)* | 307 | 73 | 56 | 45 | 40 | | *124* | |
| *Canada* | *890* | *101* | *100* | *104* | *108* | *112* | | *996* |
| *Czech Republic* | *204* | *91* | *83* | *73* | | *68* | | *139* |
| Denmark | 263 | 100 | 99 | 100 | 97 | | 256 | |
| Estonia | 60 | 100 | 91 | 78 | 77 | | 46 | |
| *Finland* | *101* | *96* | *93* | *92* | *92* | *87* | | *88* |
| *France* | *1 626* | *98* | *96* | *96* | *96* | *95* | | *1 551* |
| *Germany* | *2 044* | *88* | *84* | *83* | *81* | | *1 660* | |
| Greece | 175 | | | | | | | |
| *Hungary (1990)* | *173* | *97* | *83* | *73* | *70* | | *121* | |
| Hungary (1985-87)* | 208 | 80 | 69 | 61 | 58 | | 121 | |
| *Iceland* | *12* | *99* | *96* | *95* | *95* | *96* | | *11* |
| *Ireland* | *640* | *98* | *98* | *99* | *99* | *99* | | *63* |
| Italy | 1 860 | | | | | | | |
| *Japan* | *843* | *100* | *101* | *102* | *101* | | *849* | |
| *Latvia* | *111* | | | | | *40* | | *45* |
| Luxembourg | 18 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *505* | *102* | *100* | *98* | *96* | *94* | | *475* |
| *New Zealand* | *1 513* | *98* | *95* | *93* | *95* | *96* | | *1 460* |
| *Norway* | *91* | *102* | *104* | *102* | *107* | *105* | | *96* |
| Poland (1990) | | | | | | | | |
| Poland (1988)* | 862 | | 82 | | | | | |
| *Portugal* | *176* | *100* | *100* | *100* | *100* | | *176* | |
| Romania (1990) | | | | | | | | |
| Romania (1989)* | 610 | | | | | | | |
| *Russian Federation* | *4 890* | | | | *77* | | *3 770* | |
| *Slovakia* | *187* | *92* | *81* | *70* | *65* | *65* | | *122* |
| Spain | 887 | | | | | | | |
| *Sweden* | *200* | *98* | *99* | *99* | *101* | *99* | | *197* |
| *Switzerland* | *151* | *101* | *100* | *100* | *98* | *98* | | *148* |
| *United Kingdom* | *1 143* | *98* | *98* | *97* | *98* | | *1 116* | |
| United States | 8 596 | 99 | 102 | 102 | 107 | | 9 196 | |

* Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990, Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

**Table A.4.4 $CH_4$ emissions from waste, 1990 - 1995 (Gigagrams and percentage)**

| | 1990 (Gg) | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | | 1991 % | 1992 % | 1993 % | 1994 % | 1995 % | 1994 (Gg) | 1995 (Gg) |
| *Australia* | *704* | *102* | *104* | *107* | *109* | | *767* | |
| Austria | 228 | | | | | | | |
| *Belgium* | *174* | *102* | *104* | *105* | *106* | | *184* | |
| *Bulgaria (1990)* | *802* | *105* | *100* | *92* | *88* | | *704* | |
| Bulgaria (1988)* | 732 | 115 | 110 | 100 | 96 | | 704 | |
| *Canada* | *840* | *99* | *100* | *102* | *104* | *106* | | *889* |
| *Czech Republic* | *149* | *99* | *99* | *97* | | *97* | | *144* |
| Denmark | 122 | 100 | 100 | 100 | 100 | | 122 | |
| Estonia | 42 | 98 | 74 | 67 | 71 | | 30 | |
| *Finland* | *126* | *102* | *105* | *106* | *105* | *106* | | *133* |
| *France* | *800* | *99* | *97* | *95* | *83* | *85* | | *678* |
| *Germany* | *1 870* | *97* | *101* | *101* | *102* | | *1 900* | |
| Greece | 110 | | | | | | | |
| *Hungary (1990)*[b] | | | | | | | *255* | |
| Hungary (1985-87)*[b] | | | | | | | | |
| *Iceland* | *11* | *103* | *86* | *89* | *90* | *87* | | *10* |
| *Ireland* | *136* | *100* | *100* | *100* | *100* | *101* | | *138* |
| Italy | 1 611 | | | | | | | |
| *Japan* | *397* | *97* | *95* | *94* | *94* | | *373* | |
| *Latvia* | *44* | | | | | *118* | | *51* |
| Luxembourg | 4 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *379* | *100* | *99* | *99* | *100* | *100* | | *380* |
| *New Zealand* | *155* | *101* | *98* | *96* | *91* | *85* | | *132* |
| *Norway* | *302* | *100* | *100* | *102* | *106* | *107* | | *322* |
| Poland (1990) | | | | | | | | |
| Poland (1988)* | 906 | | 104 | | | | | |
| *Portugal* | *35* | *100* | *100* | *100* | *100* | | *35* | |
| Romania (1990) | | | | | | | | |
| Romania (1989)* | 241 | | | | | | | |
| *Russian Federation* | *1 940* | | | | *101* | | *1 950* | |
| *Slovakia* | *66* | *105* | *117* | *106* | *98* | *95* | | *63* |
| Spain | 491 | | | | | | | |
| *Sweden* | *85* | *100* | *100* | *100* | *72* | *72* | | *61* |
| *Switzerland* | *69* | *99* | *99* | *98* | *98* | *97* | | *67* |
| *United Kingdom* | *1 923* | *98* | *98* | *96* | *95* | | *1 826* | |
| United States | 10 150 | 101 | 100 | 100 | 102 | | 10 400 | |

* Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

[b] Although estimates were reported for the years 1991-1994, it was not possible to present the trends since the estimates of emissions from waste were only reported for 1991-1994

**Table A.5.1 Total anthropogenic $N_2O$ emissions, 1990 - 1995 (Gigagrams and percentage)**

| | | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1994 | 1995 |
| | (Gg) | % | % | % | % | % | (Gg) | (Gg) |
| *Australia* | *81.2* | *98* | *98* | *100* | *100* | | *81.6* | |
| Austria | 4.1 | | | | | | | |
| *Belgium* | *30.8* | *100* | *97* | *99* | *105* | | *32.3* | |
| *Bulgaria (1990)* | *29.6* | *78* | *65* | *59* | *61* | | *18.0* | |
| Bulgaria (1988)[a] | 30.8 | 75 | 63 | 57 | 58 | | 18.0 | |
| *Canada* | *86.0* | *101* | *107* | *109* | *116* | *125* | | *107.8* |
| *Czech Republic* | *24.0* | *96* | *96* | *88* | | *90* | | *21.6* |
| Denmark | 10.3 | 104 | 103 | 105 | 106 | | 10.9 | |
| Estonia | 2.4 | 98 | 77 | 60 | 55 | | 1.3 | |
| *Finland* | *18.0* | | *94* | *100* | *100* | *100* | | *18.0* |
| *France* | *181.7* | *99* | *96* | *90* | *93* | *95* | | *173.5* |
| *Germany* | *226.0* | *97* | *100* | *96* | *97* | *93* | | *210.0* |
| Greece | 13.7 | | | | | | | |
| *Hungary (1990)* | *11.4* | *65* | *63* | *60* | *72* | | *8.2* | |
| Hungary (1985-87)[a] | 12.9 | 58 | 56 | 53 | 63 | | 8.2 | |
| *Iceland* | *0.5* | *100* | *98* | *98* | *96* | *104* | | *0.6* |
| *Ireland* | *29.4* | *86* | *87* | *87* | *88* | *89* | | *26.0* |
| Italy | 120.3 | | | | | | | |
| *Japan* | *105.3* | *103* | *101* | *102* | *104* | | *110.0* | |
| *Latvia* | *2.4* | | | | | *28* | | *0.7* |
| Luxembourg | 0.6 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *51.2* | *104* | *111* | *112* | *113* | *114* | | *58.5* |
| *New Zealand* | *47.5* | *96* | *97* | *97* | *97* | *98* | | *46.7* |
| *Norway* | *15.0* | *100* | *87* | *93* | *93* | *93* | | *14.0* |
| Poland (1990) | 156.0 | | 32 | | | | | |
| Poland (1988)[a] | 58.9 | | 85 | | | | | |
| *Portugal* | *10.6* | *105* | *111* | *106* | *103* | | *10.9* | |
| Romania (1990) | 106.8 | 85 | 64 | 92 | | | | |
| Romania (1989)[a] | 122.7 | 74 | 56 | 80 | | | | |
| *Russian Federation* | *228.0* | | | | *59* | | *134.5* | |
| *Slovakia* | *10.7* | *87* | *73* | *58* | *59* | *64* | | *6.8* |
| Spain | 93.9 | | | | | | | |
| *Sweden* | *9.2* | *100* | *96* | *100* | *103* | *100* | | *9.2* |
| *Switzerland* | *11.5* | *101* | *102* | *103* | *103* | *103* | | *11.8* |
| *United Kingdom* | *112.5* | *95* | *81* | *72* | *83* | | *93.7* | |
| United States | 411.4 | 97 | 97 | 97 | 87 | | 359.0 | |

[a] Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990, Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

**Table A.5.2 $N_2O$ emissions from transport, 1990 - 1995 (Gigagrams and percentage)**

| | | Percentage relative to 1990, 1990=100 | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1994 | 1995 |
| | (Gg) | % | % | % | % | % | (Gg) | (Gg) |
| *Australia* | *5.2* | *112* | *137* | *154* | *171* | | *8.9* | |
| Austria | 0.5 | | | | | | | |
| *Belgium* | *0.9* | *97* | *108* | *118* | *129* | | *1.2* | |
| *Bulgaria (1990)* | *0.3* | *67* | *33* | *67* | *33* | | *0.1* | |
| Bulgaria (1988)* | 0.2 | 103 | 51 | 103 | 51 | | 0.1 | |
| *Canada* | *29.0* | *107* | *121* | *138* | *155* | *166* | | *48.0* |
| *Czech Republic* | *1.0* | *100* | *100* | *100* | | *100* | | *1.0* |
| Denmark | 0.4 | 125 | 150 | 200 | 200 | | 0.8 | |
| Estonia | 0.0 | | | | | | | |
| *Finland* | *2.0* | | *100* | *100* | *100* | *100* | | *2.0* |
| *France* | *4.0* | *106* | *112* | *123* | *146* | *167* | | *6.7* |
| *Germany* | *11.0* | *127* | *145* | *154* | *173* | | *19.0* | |
| Greece | 1.2 | | | | | | | |
| *Hungary (1990)* | | | | | | | | |
| Hungary (1985-87)* | 0.8 | | | | | | | |
| *Iceland* | *0.0* | *100* | *100* | *100* | *100* | *100* | | *0.0* |
| *Ireland* | *0.2* | *244* | *250* | *244* | *256* | *272* | | *0.5* |
| Italy | 3.5 | | | | | | | |
| *Japan* | *12.9* | *104* | *106* | *106* | *107* | | *13.8* | |
| *Latvia* | *0.1* | | | | | *93* | | *0.1* |
| Luxembourg | 0.0 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *4.9* | *110* | *124* | *135* | *147* | *157* | | *7.7* |
| *New Zealand* | *0.4* | *101* | *106* | *110* | *117* | *126* | | *0.5* |
| *Norway* | *1.0* | *100* | *100* | *100* | *100* | *100* | | *1.0* |
| *Poland (1990)* | | | | | | | | |
| Poland (1988)* | 106 | | 88 | | | | | |
| *Portugal* | *0.4* | *100* | *125* | *125* | *125* | | *0.5* | |
| *Romania (1990)* | | | | | | | | |
| Romania (1989)* | 0.3 | | | | | | | |
| *Russian Federation* | | | | | | | | *0.3* |
| *Slovakia* | | | | | | | | |
| Spain | 2.1 | | | | | | | |
| *Sweden* | *2.6* | *100* | *100* | *100* | *108* | *112* | | *2.9* |
| *Switzerland* | *1.1* | *111* | *122* | *134* | *145* | *157* | | *1.8* |
| *United Kingdom* | *3.1* | *105* | *125* | *168* | *220* | | *6.8* | |
| United States | 92.3 | 108 | 108 | 108 | 115 | | 106.0 | |

* Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

**Table A.5.3 $N_2O$ emissions from agriculture, 1990 - 1995 (Gigagrams and percentage)**

| | Percentage relative to 1990, 1990=100 | | | | | | Last reported value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1994 | 1995 |
| | (Gg) | % | % | % | % | % | (Gg) | (Gg) |
| *Australia* | *68.2* | *100* | *98* | *99* | *99* | | *67.4* | |
| Austria | 2.0 | | | | | | | |
| *Belgium* | *10.9* | *100* | *100* | *98* | *99* | | *10.8* | |
| *Bulgaria (1990)* | *8.2* | *73* | *44* | *35* | *32* | | *2.6* | |
| Bulgaria (1988)* | 13.4 | 45 | 27 | 22 | 19 | | 2.6 | |
| *Canada* | *11.0* | *100* | *109* | *118* | *118* | *121* | | *13.3* |
| *Czech Republic* | *2.0* | *100* | *100* | *100* | | *85* | | *1.7* |
| Denmark | 8.5 | 100 | 100 | 100 | 100 | | 8.5 | |
| Estonia | 0.9 | 99 | 77 | 55 | 55 | | 0.5 | |
| *Finland* | *10.0* | *100* | *90* | *90* | *90* | *90* | | *9.0* |
| *France* | *54.5* | *99* | *97* | *93* | *95* | *97* | | *52.6* |
| *Germany* | *96.0* | *91* | *86* | *84* | *90* | | *86.0* | |
| Greece | 7.5 | | | | | | | |
| *Hungary (1990)* | *4.1* | *27* | *26* | *24* | *29* | | *1.2* | |
| Hungary (1985-87)* | 4.6 | 25 | 24 | 21 | 26 | | 1.2 | |
| *Iceland* | *0.5* | *100* | *98* | *98* | *98* | *104* | | *0.5* |
| *Ireland* | *23.3* | *80* | *80* | *81* | *82* | *82* | | *19.1* |
| Italy | 58.7 | | | | | | | |
| *Japan* | *9.7* | *98* | *96* | *95* | *94* | | *9.1* | |
| *Latvia* | *1.4* | | | | | *32* | | *0.4* |
| Luxembourg | 0.5 | | | | | | | |
| *Monaco* | | | | | | | | |
| *Netherlands* | *22.2* | *103* | *118* | *118* | *120* | *121* | | *26.9* |
| *New Zealand* | *44.9* | *98* | *96* | *96* | *97* | *98* | | *44.1* |
| *Norway* | *6.0* | *100* | *100* | *100* | *100* | *100* | | *6.0* |
| Poland (1990) | | | | | | | | |
| Poland (1988)* | 31.5 | | 100 | | | | | |
| *Portugal* | *3.6* | *100* | *100* | *100* | *100* | | *3.6* | |
| Romania (1990) | | | | | | | | |
| Romania (1989)* | 25.3 | | | | | | | |
| *Russian Federation* | *190.0* | | | | *53* | | *100.0* | |
| *Slovakia* | *7.7* | *90* | *68* | *53* | *57* | *57* | | *4.4* |
| Spain | 63.4 | | | | | | | |
| *Sweden* | *0.2* | *100* | *100* | *100* | *100* | *100* | | *0.2* |
| *Switzerland* | *9.2* | *100* | *99* | *98* | *97* | *96* | | *8.8* |
| *United Kingdom* | *10.4* | *100* | *97* | *92* | *95* | | *9.9* | |
| United States | 187.9 | 106 | 106 | 106 | 115 | | 216.0 | |

* Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990, Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

**Table A.6** **Anthropogenic emissions of other greenhouse gases, 1990 and 1995[a, b]**
**(Gigagrams of $CO_2$ equivalent, percentage relative to 1990, 1990=100 per cent)**

| | HFCs[c] | | | PFCs[d] | | | $SF_6$ | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1995 | | 1990 | 1995 | | 1990 | 1995 | | 1990 | 1995 | |
| | Gg | Gg | % | Gg | Gg | % | Gg | Gg | % | Gg | Gg | % |
| Australia | | | | 4 842 | *2 096* | 43 | | | | 4 842 | *2 096* | 43 |
| Canada | | 500 | | 5 936 | 6 019 | 101 | 2 868 | 1 888 | 66 | 8 804 | 8 407 | 95 |
| Denmark | | | | | | | 215 | | | 215 | | |
| France | 2 970 | | | 2 002 | | | 141 | | | 5 113 | | |
| Germany | 260 | 2 878 | 1107 | 2 693 | 1 665 | 62 | 3 895 | 5 998 | 154 | 6 849 | 10 542 | 154 |
| Iceland | | 25 | | 312 | 54 | 18 | | | | 312 | 79 | 25 |
| Italy | | | | 103 | | | | | | 103 | | |
| Japan | 2 080 | 14 560 | 700 | 5 416 | 14 217 | 263 | 38 240 | 52 580 | 138 | 45 730 | 81 357 | 178 |
| Netherlands | 4 910 | 8 452 | 172 | 2 458 | 2 391 | 97 | 1 386 | 1 457 | 105 | 8 755 | 12 302 | 141 |
| New Zealand | | 183 | | 601 | 196 | 33 | 552 | 4 368 | 791 | 1 153 | 4 748 | 412 |
| Norway | | 244 | | 2 545 | 1 441 | | 2 198 | 573 | 26 | 4 744 | 2 259 | 48 |
| Sweden | | 195 | | 400 | 390 | 98 | 956 | 1 242 | 130 | 1 356 | 1 827 | 135 |
| Switzerland | | 260 | | | 66 | | | 717 | | | 1 043 | |
| United Kingdom | 1 366 | *2 051* | 150 | 2 085 | *473* | 23 | 573 | *621* | 108 | 4 025 | *3 146* | 78 |
| United States | 48 695 | *66 075* | 136 | 18 133 | *14 840* | 82 | 22 466 | *24 617* | 110 | 89 294 | *105 532* | 118 |

[a] When the data for 1995 were not available the data for 1994 are given in *italics*.
[b] With the exception of Canada, the Netherlands, the United Kingdom and the United States, which reported actual emissions, and Japan, which reported potential emissions. Parties did not indicate clearly whether emissions reported are potential or actual ones.
[c] Finland, Germany, New Zealand and the United Kingdom only reported aggregated data for HFC figures. The secretariat therefore assumed that all these emissions were HFC-134a.
[d] Finland, New Zealand and the United Kingdom reported only aggregated PFC figures. The secretariat therefore assumed that approximately 90 per cent was $CF_4$ and 10 per cent $C_2F_6$.

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**Table A.7** **Total anthropogenic emissions of all greenhouse gases[a], 1990 - 1995 (Gigagrams of $CO_2$ equivalent and percentage)**

| | | Percentage relative to 1990, 1990=100 | | | | | Last Reported Value | |
|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1994 | 1995 |
| | (Gg) | % | % | % | % | % | (Gg) | (Gg) |
| *Australia* | *420 521* | *99* | *99* | *100* | *101* | | *424 241* | |
| Austria | 73 134 | | | | | | | |
| *Belgium* | *136 258* | *104* | *103* | *101* | *105* | | *143 746* | |
| Bulgaria (1990) | 120 536 | 83 | 75 | 75 | 71 | | 85 870 | |
| Bulgaria (1988)[b] | 136 099 | 73 | 67 | 66 | 63 | | 85 870 | |
| *Canada* | *566 664* | *98* | *101* | *103* | *105* | *109* | | *619 869* |
| *Czech Republic* | *191 578* | *93* | *85* | *82* | | *79* | | *150 912* |
| Denmark | 63 974 | 117 | 108 | 111 | 117 | | 74 924 | |
| Estonia | 45 309 | 96 | 73 | 55 | 57 | | 25 969 | |
| *Finland* | *64 546* | | *97* | *99* | *108* | *103* | | *66 691* |
| *France* | *503 181* | *103* | *103* | *97* | *96* | *99* | | *498 855* |
| *Germany* | *1 210 387* | *96* | *92* | *91* | *90* | *88* | | *1 070 691* |
| *Greece* | *93 550* | | | | | | | |
| *Hungary (1990)*[c] | *86 652* | | | | | | *78 039* | |
| Hungary (1985-87)[b,c] | 101 619 | | | | | | 78 039 | |
| *Iceland* | *3 109* | *96* | *94* | *95* | *94* | *96* | | *2 977* |
| *Ireland* | *56 861* | *99* | *100* | *100* | *103* | *104* | | *59 060* |
| Italy | 548 259 | | | | | | | |
| *Japan* | *1 235 986* | *102* | *104* | *103* | *109* | | *1 347 200* | |
| *Latvia* | *27 059* | | | | | *50* | | *13 637* |
| Luxembourg | 12 028 | | | | | | | |
| *Monaco* | *71* | | | | | | | |
| *Netherlands* | *215 357* | *99* | *99* | *104* | *105* | *110* | | *236 154* |
| *New Zealand* | *77 188* | *99* | *100* | *99* | *104* | *105* | | *80 913* |
| *Norway* | *54 011* | *96* | *93* | *96* | *101* | *102* | | *54 878* |
| Poland (1990) | 591 390 | 67 | 74 | | | | | |
| Poland (1988)[b] | 561 021 | 71 | 78 | | | | | |
| *Portugal* | *50 195* | *105* | *116* | *110* | *108* | | *54 314* | |
| Romania (1990) | 245 245 | 84 | 72 | 74 | | | | |
| Romania (1989)[b] | 285 404 | 72 | 62 | 64 | | | | |
| *Russian Federation* | *3 006 761* | | | | *72* | | *2 176 692* | |
| *Slovakia* | *71 938* | *88* | *82* | *77* | *72* | *80* | | *57 239* |
| Spain | 301 602 | | | | | | | |
| *Sweden* | *66 457* | *97* | *101* | *100* | *105* | *104* | | *69 004* |
| *Switzerland* | *53 749* | *103* | *101* | *98* | *97* | *100* | | *53 806* |
| *United Kingdom* | *711 579* | *100* | *97* | *94* | *93* | | *664 471* | |
| United States | 5 740 851 | 99 | 101 | 102 | 103 | | 5 934 137 | |

[a] Aggregated emissions of $CO_2$, $CH_4$, $N_2O$, and where reported HFCs, PFCs, $SF_6$ (see table A.6), using IPCC 1995 global warming potentials

[b] Some EIT Parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989)

[c] Although estimates were reported for the years 1991-1994, it was not possible to present the trends since the estimates for energy-related emissions for the base year and 1990 were not fully consistent with estimates for 1991-1994 and estimates of emissions from waste were not provided for all gases for all years

**Table B.1. Projected anthropogenic emissions of $CO_2$ for the year 2000, excluding land-use change and forestry (Gigagrams)**

| | Data from inventory | Data from projection | | Variations | |
|---|---|---|---|---|---|
| | Base level[a] | Base level[b] | 2000 level[c] | from inventory | from projection |
| | (Gg) | (Gg) | (Gg) | (Percentage) | |
| *Australia* | *273 123* | 288 965 | 332 799 | 15.1 | 15.1 |
| Austria | 59 200 | 59 900 | 65 800 | 11.1 | 9.8 |
| *Belgium* | *113 405* | *[121 000]* | *125 200* | *10.4* | *3.5* |
| *Bulgaria*[d] *(1990)* | *82 372* | 82 990 | 69 898 | -15.8 | -15.8 |
| Bulgaria (1988) | 96 878 | 96 878 | 69 898 | -27.9 | -27.9 |
| *Canada* | *464 000* | *463 700* | *500 600* | *8.0* | *8.0* |
| *Czech Republic* | *165 490* | 163 584 | 135 536 | -18.2 | -17.1 |
| Denmark | 52 025 | 58 353 | 53 753 | 3.3 | -7.9 |
| Estonia | 37 797 | 37 800 | 17 500 - 23 000 | (-53.7)-(-39.2) | (-53.7)-(-39.2) |
| *Finland* | *53 800* | *53 800* | *(58 000 - 60 000)* | *(7.8 - 11.5)* | *(7.8 - 11.5)* |
| *France* | *378 379* | 383 167 | 397 833 | 5.1 | 3.8 |
| *Germany* | *1 014 155* | *1 014 000* | *894 000* | *-11.8* | *-12.0* |
| Greece | 82 100 | 82 100 | 94 500 | 15.1 | 15.1 |
| *Hungary (1990)* | *71 673* | 69 116 | 68 741 | -4.1 | -0.5 |
| Hungary[d] (1985-87) | 83 676 | 81 534 | 68 741 | -17.8 | -15.7 |
| *Iceland* | *2 147* | *2 147* | *2 456* | *14.4* | *14.4* |
| *Ireland* | *30 719* | *30 719* | *34 988* | *13.8* | *13.8* |
| Italy | 428 941 | 423 776 | 482 440 | 12.5 | 13.8 |
| *Japan* | *1 124 532* | 1 173 000 | 1 200 000 | 3.9 | 2.3 |
| *Latvia* | *22 976* | 22 976 | 16 956 | -26.2 | -26.2 |
| Luxembourg | 11 343 | 11 244 | 7 556 | -33.3 | -32.8 |
| *Netherlands* | *167 550* | *[173 000]* | *168 000* | *0* | *-2.9* |
| *New Zealand* | *25 476* | *25 476* | *31 080* | *21.9* | *21.9* |
| *Norway* | *35 544* | *36 000* | *44 000* | *23.7* | *22.0* |
| Poland (1990) | 414 930 | 338 000-455 000 | (-18.5)-(-9.7) | | |
| Poland[d] (1988) | 478 880 | 458 000 | 338 000-455 000 | | (-26.2)-(-0.7) |
| Portugal | 42 148 | 38 689 | 54 274 | 28.8 | 40.3 |
| Romania (1990) | 171 103 | | | | |
| Romania[d] (1989) | 198 479 | | | | |
| Russian Federation | 2 375 591 | 2 330 000 | 1 930 000 - 2 026 000 | (-19.1)-(-15.1) | (-17.2)-(-13.0) |
| *Slovakia* | *60 032* | 57 808 | 48 639 | -16.5 | -15.9 |
| Spain | 227 322 | 222 908 | 276 523 | | 24.1 |
| *Sweden* | *55 445* | *[57 600]* | *60 100* | *8.3* | *4.3* |
| *Switzerland* | *45 070* | *[47 100]* | *43 900* | *-2.6* | *-6.8* |
| *UK* | *580 237* | *580 000* | *550 000* | *-5.1* | *-5.1* |
| USA | 4 957 022 | 5 012 789 | 5 163 136 | 4.2 | 3.0 |

[a] Data from inventory table A.1.

[b] Differences in 1990 levels between inventories and projections are, for example, due to revisions of inventories, rounding, calibration of models, or the projection of only a subset of the sources. For some countries differences are also due to statistical adjustments. Several countries, as indicated through square brackets, have made temperature adjustments for the projection base level (Belgium, the Netherlands, Sweden, Switzerland). Denmark's emissions are adjusted for electricity imports. Sweden's base year for projections is 1995.

[c] "With measures" levels for 2000.

[d] Some EIT parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990: Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

**Note**

Additional information on the projections from Parties which submitted second national communications is given as notes in the C.1 table.

**Table B.2. Projections of $CO_2$ removals or emissions in land-use change and forestry[a] for the year 2000 (Gigagrams)**

| | Data from inventory | Data from projection | | Variations from projection |
|---|---|---|---|---|
| | Base level[b] (Gg) | Base level[c] (Gg) | 2000 level[d] (Gg) | (Percentage) |
| *Australia* | *121 688* | 130 843 | 121 992 | -6.8 |
| Austria | -15 000 | | | |
| *Belgium* | *-2 057* | *-2 100* | *-2 100* | 0 |
| *Bulgaria (1990)* | *-5 801* | -5 801 | -5 801 | 0 |
| Bulgaria[e] (1988) | -4 657 | -4 657 | -5 801 | 0 |
| *Canada* | | | | |
| *Czech Republic* | *-2 281* | -2 300 | -2 800 | -22.8 |
| Denmark | -2 600 | -2 600 | -2 600 | 0 |
| Estonia | 1 796 | | | |
| *Finland*[f] | *-31 000* | *-31 000* | *(-12 000)-(-17 000)* | *(62)-(46)* |
| *France* | *-33 128* | -32 000 | -39 000 | -21.8 |
| *Germany* | *- 30 000* | | | |
| Greece | | | | |
| Hungary (1990) | *-4 467* | | | |
| Hungary[e] (1985-1987) | -3 097 | | | |
| *Ireland* | *-5 160* | *-5 160* | *-7 580* | *-46.8* |
| Italy | -36 730 | -36 730 | -46 730 | -27.2 |
| *Japan* | *-83 341* | -90 000 | -92 000 | -2.2 |
| *Latvia* | *-14 300* | -14 300 | -8 940 | 37.5 |
| Luxembourg | | | | |
| *Netherlands* | *-1 500* | *-1 500* | *-1 700* | *-13.0* |
| *New Zealand*[g] | *-20 569* | *-20 569* | *-18 994* | *8.0* |
| *Norway* | *-9 400* | *-9 400* | *-11 000* | *17.0* |
| Poland (1990) | | | | |
| Poland[e] (1988) | -1 408 | | | |
| Portugal | | | | |
| Romania (1990) | | | | |
| Romania[e] (1989) | -2 925 | | | |
| *Russian Federation* | *-392 620* | | | |
| *Slovakia* | *-4 257* | | | |
| Spain | -23 166 | -23 170 | -25 700 | -10.9 |
| *Sweden*[h] | *-34 368* | *-34 000* | *-29 000* | *14.7* |
| *Switzerland* | *-4 360* | *-4 360* | *-5 100* | *-17.0* |
| *UK* | *20 240* | *20 600* | *11 100* | *-46.1* |
| USA | -436 000 | -476 710 | -539 049 | -13.1 |

[a] Negative values in Gg denote removal of $CO_2$. Positive values denote a net source of emissions. Negative values in percentage denote more removals in 2000 than in 1990, or a decrease in net emissions.

[b] Data from inventory table A.2.

[c] Differences in 1990 levels between inventories and projections are, for example, due to late revisions of inventories, rounding, or the fact that only a subset of the sources was projected.

[d] "With measures" levels for 2000.

[e] Some EIT countries have asked for special consideration under Article 4.6 to use different base years from 1990: Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

[f] The emissions for land-use change and forestry in both Finland and the United Kingdom include emissions and uptakes from wetland drainage and peat extraction. The range of emissions given for Finland results from the two scenarios given in its national communication.

[g] New Zealand reported three different scenarios on the basis of different planting strategies. The "Central estimate of New Planting post 1997" is given in the table.

[h] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.

Note

Additional information on the projections from Parties which submitted second national communications is given as notes in the C.1 table.

**Table B.3. Projected anthropogenic emissions of $CH_4$[a] for the year 2000 (Gigagrams)**

| | Data from inventory | Data from projection | | Variations from projection |
|---|---|---|---|---|
| | Base level[b] | Base level[c] | 2000 level[d] | |
| | (Gg) | (Gg) | (Gg) | (Percentage) |
| *Australia* | *5 589* | 6 244 | 6 480 | 3.8 |
| Austria | 603 | ~600 | ~600 | ~0 |
| *Belgium* | *634* | | | |
| *Bulgaria (1990)* | *1 380* | 1 006 | 1 057 | 5.1 |
| Bulgaria[e] (1988) | 1 413 | 1 119 | 1 057 | -5.5 |
| *Canada* | *3 200* | *3 148* | *3 546* | *12.6* |
| *Czech Republic* | *888* | 623 | 511 | -18.0 |
| Denmark | 407 | 406 | 354 | -12.8 |
| Estonia | 323 | | | |
| *Finland* | *246* | *246* | *226* | *-8.0* |
| *France* | *3 017* | 2 900 | 2 900 | 0 |
| *Germany* | *5 682* | *5 682* | *3 892* | *-31.5* |
| Greece | 343 | 343 | < 343 | < 0.0 |
| *Hungary (1990)* | *545* | 492 | 278 | -43.5 |
| Hungary[e] (1985-87) | 664 | 605 | 278 | -54.0 |
| *Iceland* | *23* | *23* | *21* | *-8.0* |
| *Ireland* | *811* | *811* | *837* | *3.2* |
| Italy | 3 901 | 3 900 | 2 965 | -24.0 |
| *Japan* | *1 575* | 1 380 | 1 150 | -16.7 |
| *Latvia* | *159* | 159 | 114 | -28.2 |
| Luxembourg | 24 | 25 | 26 | 6.1 |
| *Netherlands* | *1 103* | *1 067* | *788* | *-33.6* |
| *New Zealand* | *1 706* | *1 706* | *1 541* | *-9.7* |
| *Norway* | *432* | *432* | *414* | *-4.0* |
| Poland (1990) | 6 100 | 6 100 | 1 780 | -70.9 |
| Poland[e] (1988) | 3 042 | 6 060 | 1 780 | -70.6 |
| Portugal | 226 | | | |
| Romania (1990) | 1 954 | | | |
| Romania[e] (1989) | 2 328 | | | |
| *Russian Federation* | *26 900* | | | |
| *Slovakia* | *409* | 342 | 293 | -14.3 |
| Spain | 2 151 | | | |
| *Sweden[f]* | *324* | *302* | *284* | *-6.0* |
| *Switzerland* | *244* | *244* | *229* | *-6.0* |
| *UK* | *4 402* | *4 402* | *3 418* | *-22.3* |
| USA | 27 000 | 27 669 | 22 335 | -19.3 |

[a] Figures provided in $CO_2$ and C equivalents have been converted.

[b] Data from inventory table A.4.1.

[c] Differences in 1990 levels between inventories and projections are, for example, due to late revisions of inventories, rounding, calibration of models, or the projection of only a subset of the sources.

[d] "With measures" levels for 2000.

[e] Some EIT parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

[f] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995

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Table B.4. **Projected anthropogenic emissions of $N_2O$[a] for the year 2000 (Gigagrams)**

| | Data from inventory | Data from projection | | Variations from projection |
|---|---|---|---|---|
| | Base level[b] (Gg) | Base level[c] (Gg) | 2000 level[d] (Gg) | (Percentage) |
| *Australia* | *81.2* | 60.1 | 61.1 | 1.5 |
| Austria | 4.1 | - 4.2 | - 4.2 | - 0 |
| *Belgium* | *31.0* | | | |
| *Bulgaria (1990)* | *29.6* | 14.3 | 16.3 | 14.0 |
| Bulgaria[e] (1988) | 30.8 | 17.4 | 16.3 | -6.3 |
| *Canada* | *86.0* | *86.0* | *74.0* | *-14.0* |
| *Czech Republic* | *24.0* | | | |
| Denmark | 10.3 | 10.5 | 11.5 | 9.5 |
| Estonia | 2.4 | | | |
| *Finland* | *18.0* | *18.0* | *21.5* | *19.4* |
| *France* | *181.7* | 177.0 | 93.0 | - 47.0 |
| *Germany* | *226.0* | *226.0* | *162.0* | *-28.0* |
| Greece | 13.7 | 13.7 | 13.7 | 0.0 |
| *Hungary (1990)* | *11.4* | 7.3 | 6.2 | -14.3 |
| Hungary[e] (1985-87) | 12.9 | 8.4 | 6.2 | -26.2 |
| *Iceland* | *0.6* | *0.6* | *0.6* | *0* |
| *Ireland* | *29.4* | *29.4* | *26.0* | *-11.5* |
| Italy | 120.3 | 119.4 | 123.6 | 3.5 |
| *Japan* | *105.3* | 47.0 | - 52.0 | 8.3 |
| *Latvia* | *2.4* | 2.4 | 1.4 | -41.6 |
| Luxembourg | 0.6 | 0.7 | 0.7 | 0 |
| *Netherlands* | *51.2* | *62.6* | *65.2* | *4.0* |
| *New Zealand* | *47.5* | *47.5* | *46.0* | *-3.0* |
| *Norway* | *15.0* | *15.3* | *16.0* | *4.5* |
| Poland (1990) | 156.0 | | 61.8 | |
| Poland (1988) | 58.9 | 73.0 | 61.8 | -15.3 |
| Portugal | 10.5 | | | |
| Romania (1990) | 106.8 | | | |
| Romania (1989) | 122.7 | | | |
| *Russian Federation* | *228.0* | | | |
| *Slovakia* | *10.7* | 14.7 | 14.1 | -4.1 |
| Spain | 93.9 | | | |
| *Sweden*[f] | *9.2* | *9.3* | *9.3* | *1.0* |
| *Switzerland* | *11.5* | *11.5* | *11.7* | *1.7* |
| *UK* | *112.5* | *111.7* | *42.9* | *-61.6* |
| USA | 411.4 | 529.7 | 421.0 | -20.5 |

[a] Figures provided in Mt C equivalents have been converted.

[b] Data from inventory table A.5.1.

[c] Differences in 1990 levels between inventories and projections are, for example, due to late revisions of inventories, rounding, calibration of models, or the projection of only a subset of the sources.

[d] "With measures" levels for 2000.

[e] Some EIT parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

[f] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.

**Comments**

Twenty-six Parties projected emissions of $N_2O$. One Party provided figures covering a sector that only represented a minor part of the emissions in 1990, while another four did not cover all sources represented in the inventories. Fifteen Parties, representing 58 per cent of the aggregated inventory figure for 1990, projected stabilization or decreases compared to their base years, four of the decreases being more than 35 per cent, often due to expected changes in industrial processes. One only gave an indication that overall emissions were not expected to increase. Nine Parties, representing 26 per cent of the aggregated inventory figures for 1990, projected increases, eight of these less than 10 per cent.

**Notes***

**Australia**: The effects of measures are subtracted (p. 76) from the "without measures" scenario (p.72) to obtain a "with measures" figure.

**Austria**: This is a "without measures" projection (p.88).

**Bulgaria**: Baseline scenario was chosen as it was seen to be closest to implemented policies and measures. $N_2O$ from agriculture was not included.

**Canada**: The projection is updated following the IDR and the figures refer to energy-related and industry emissions, while agriculture is not included.

**France**: The projection figures are taken from the summary of the communication, where they were given as carbon equivalents.

**Germany**: Projections for 2000 were submitted on 29 April 1996.

**Greece**: An increase in emissions is expected for the year 2000, but no specific projection was provided.

**Japan**: The projection figure for 2000 refers only to the effects of energy conservation and waste reduction measures (p.144).

**Monaco**: Emissions are expected to be negligible in 2000 as in 1990.

**Netherlands**: The projection figure for 2000 incorporates the effects of policies and measures initiated under NEPP2. However, a number of policies implemented to reduce $N_2O$ emissions associated with fertilizer application and animal manure have not been incorporated because of a lack of knowledge about their effects (p.65).

**Poland**: 1990 inventory data were given in the CORINAIR format and no separate figure compatible with the 2000 projection was provided.

**Switzerland**: The projection figure covers only a minor part of the sources (from transportation) and does not allow for calculation of trends (p.80).

**Hungary**: The corresponding 1985-1987 inventory figure was 8.36 Gg. The projection figures include fuel-related emissions only. The 2000 S scenario is used (table 6.2 b, p.74).

**Poland**: Different methods were used for calculating 1988 and 1990 figures. The communication states that the methodology used for 1990 overestimates the emissions and this, rather than a real increase, explains the difference. Therefore a comparison with the 1990 figures appears to be non-applicable.

**Romania**: No projections were provided.

*All references in parentheses are to the national communications.

**Table B.5. Projected emissions of other greenhouse gases for the year 2000 (Gigagrams)**

| | Base level projections[a] | | | 2000 level | | | Variations from projections | | |
|---|---|---|---|---|---|---|---|---|---|
| | HFCs[b] | PFCs[c] | $SF_6$[d] | HFCs[b] | PFCs[c] | $SF_6$[d] | HFCs | PFCs | $SF_6$ |
| | ($CO_2$ equivalent in Gg)[e] | | | ($CO_2$ equivalent in Gg)[e] | | | (Percentage) | | |
| Australia | | 4 842 | | | 1 700 | | | -59 | |
| *Canada* | *500* | *7 144* | *2 868* | *2 000* | *7 420* | *1 912* | *300* | *3.9* | *-33* |
| *Finland* | *79* | *271* | *96* | *130* | *339* | *120* | *65* | *25* | *25* |
| *Germany* | *260* | *2 694* | *3 896* | *6 336* | *799* | *4 971* | *2 337* | *-70* | *28* |
| Iceland | | 311 | | 26 | 55 | | 0 | -82 | |
| Italy | | 106 | | 2 500 | 63 | | | | |
| *Netherlands* | *4 880* | *2 234* | *1 386* | *4 763* | *2 512* | *1 625* | *-2* | *12* | *17* |
| *New Zealand* | *183* | *601* | *550* | *213* | *230* | *5 067* | *16* | *-62* | *821* |
| *Norway* | *200* | *2 500* | *2 200* | *800* | *1 300* | *525* | *300* | *-48* | *-76* |
| *Sweden* | *200* | *400* | *1 000* | *800* | *500* | *1 200* | *300* | *25* | *20* |
| *UK* | *1 366* | *2 085* | *574* | *2 390* | *575* | *1 028* | *75* | *-72* | *79* |
| USA | 67 500 | 17 000 | | 120 300 | 9 700 | | 78 | -43 | |

[a] The figures are rounded.

[b] Finland, Germany, New Zealand and the United Kingdom only reported aggregated data for HFC. The secretariat therefore assumed that all these emissions were HFC-134a. Finland, New Zealand and Sweden used 1995 as base level for the HFC projections.

[c] Finland, New Zealand and the United Kingdom reported only aggregated PFC figures. In order to estimate the $CO_2$ equivalent, the secretariat assumed that approximately 90 per cent was $CF_4$ and 10 per cent was $C_2F_6$. Finland and Sweden used 1995 as base level for the PFC projections.

[d] Finland, New Zealand and Sweden used 1995 as base level for the $SF_6$ projections.

[e] Australia, Italy and the USA reported emissions based on 1994 GWPs, as given in their first national communications, whilst all other countries presented in the table reported on the basis of 1995 GWPs as given in their second national communications. The assumed time-horizon = 100 years.

**Table B.6. Projected anthropogenic emissions of all greenhouse gases, excluding land-use change and forestry[a] (Gigagrams $CO_2$ equivalent)[b]**

| | Data from inventory | Data from projection | | Variations from projection |
|---|---|---|---|---|
| | Base level ($CO_2$ equivalent in Gg)[b] | Base level[c] ($CO_2$ equivalent in Gg)[b] | 2000 level ($CO_2$ equivalent in Gg)[b] | (Percentage) |
| *Australia* | *420 521* | 465 275 | 512 811 | 10.0 |
| Austria | 75 286 | 75 944 | 81 844 | -8.0 |
| *Belgium* | *136 258* | *[121 000]* | *125 200* | *3.0* |
| *Bulgaria (1990)* | *120 536* | 112 213 | 101 011 | -10.0 |
| Bulgaria (1988) | 141 345 | 129 862 | 101 011 | -22.0 |
| *Canada*[e] | *566 664* | *564 480* | *609 118* | *8.0* |
| *Czech Republic* | *191 578* | 178 848 | 148 056 | -17.0 |
| Denmark | 63 974 | 71 660 | 66 106 | -8.0 |
| Estonia | 45 309 | 37 800 | 17 500 -23 000 | (-54.0)-(-39.0) |
| *Finland* | *64 546* | *64 546* | *70 000* | *9.0* |
| *France* | *503 181* | 510 857 | 498 643 | -2.0 |
| *Germany* | *1 210 387* | *1 210 232* | *1 038 058* | *-14.0* |
| Greece | 93 550 | 94 888 | 107 288 | 13.0 |
| *Hungary (1990)* | *86 652* | 83 506 | 77 536 | -7.0 |
| Hungary (1985-87) | 104 082 | 99 045 | 77 536 | -22.0 |
| *Iceland* | *3 109* | *3 227* | *3 094* | *-4.0* |
| *Ireland* | *56 819* | *56 819* | *60 625* | *7.0* |
| Italy | 548 259 | 557 640 | 597 200 | 7.0 |
| *Japan* | *1 235 986* | 1 221 850 | 1 244 815 | 2.0 |
| *Latvia* | *27 059* | 27 640 | 20 197 | -27.0 |
| Luxembourg | 12 123 | 12 081 | 8 417 | -30.0 |
| *Netherlands* | *215 357* | *[223 313]* | *213 660* | *-4.0* |
| *New Zealand* | *77 188* | *77 178* | *83 211* | *8.0* |
| *Norway* | *54 011* | *54 515* | *60 279* | *11.0* |
| Poland (1990) | 591 390 | 401 386-518 386 | | |
| Poland[d] (1988) | 572 257 | 629 830 | 401 386 - 518 386 | (-36.0) - (-18.0) |
| Portugal | 50 195 | 38 689 | 54 274 | 40.0 |
| Romania (1990) | 245 245 | | | |
| Romania[d] (1989) | 285 404 | | | |
| *Russian Federation* | *3 006 781* | 2 330 000 | 1 930 000 - 2 026 000 | (-17.0) - (-13.0) |
| *Slovakia* | *71 938* | 70 891 | 60 330 | -15.0 |
| Spain | 301 602 | 222 908 | 276 523 | 24.0 |
| *Sweden* | *66 457* | *[68 225]* | *69 009* | *5.0* |
| *Switzerland* | *53 749* | *[55 749]* | *52 336* | *-6.0* |
| *UK* | *711 579* | *711 094* | *639 072* | *-10.0* |
| USA | 5 842 371 | 5 944 684 | 5 975 064 | 0.5 |

[a] Figures from tables B.1, B.3, B.4 and B.5 have been used as the starting point for these projections. Only gases and sources that were projected are included.

[b] All data presented in italics, i.e. all information from second national communications, the first national communication from Belgium and updated inventories submitted by the parties, are calculated using 1995 GWPs. All other figures are based on 1994 GWPs. The time-horizon = 100 years; figures differ from those in the communications where countries did not use those GWPs.

[c] Major differences between inventory figures and projection figures for 1990 indicate that projections were not given for all gases reported in the inventories (for example Belgium) or for all sectors, or that temperature [Belgium, France, Netherlands, Switzerland] or electricity imports (Denmark) adjustments had been taken into account.

[d] Some EIT parties by COP2 decision 9/CP.2 were allowed to use different base years from 1990; Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988) and Romania (1989).

[e] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relations to 1995.

**Table C.1. Projected anthropogenic emissions of $CO_2$, excluding land-use change and forestry until 2020 (Gigagrams)**

| | Base level (1990) | | Last reported inventory[b] | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2000 | | 2005 | | 2010 | | 2020 | |
| | Inventory (Gg) | Projection[a] (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Canada | 464 000 | 463 700 | 499 526 | 500 600 | 8 | 522 900 | 13 | 549 900 | 19 | 628 300 | 36 |
| Finland | 53 800 | 53 800 | 56 050 | 58 000 - 60 000 | 8- 12 | | | 56 000 - 71 000 | 4 - 31 | 49 000 - 80 000 | (-9) (46) |
| Germany | 1 014 155 | 1 014 000 | 894 500 | 894 000 | -12 | 867 000 | -15 | 854 000 | -16 | 847 000 | -17 |
| Ireland | 30 719 | 30 719 | 33 931 | 34 988 | 14 | 38 828 | 26 | 40 775 | 33 | | |
| Netherlands | 167 550 | [173 000] | 183 400 | 168 000 | -3 | 170 000 | -2 | 170 000 | -2 | 170 000 | -2 |
| New Zealand | 25 476 | 25 476 | 27 367 | 31 080 | 22 | 33 570 | 32 | 36 310 | 43 | 43 560 | 71 |
| Norway | 35 544 | 36 000 | 37 880 | 44 000 | 22 | 47 000 | 31 | 48 000 | 33 | 46 000 | 28 |
| Sweden | 55 445 | [57 600] | 58 108 | 60 100 | 4 | 62 100 | 8 | 64 300 | 12 | 81 000 | 41 |
| Switzerland | 45 070 | [47 100] | 44 170 | 43 900 | -7 | 44 700 | -5 | 45 700 | -3 | | |
| UK | 580 237 | 580 000 | 551 574 | 550 000 | -5 | 593 000 | 2 | 595 000 | 3 | 682 000 | 18 |

[a] Belgium, the Netherlands, Sweden, Switzerland have made temperature adjustments for the projection base level, as indicated through square brackets. Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.

[b] All countries reported their last inventory for 1995, with the exception of Belgium and the United Kingdom whose last inventory was reported for 1994.

Notes*

In the following no account is taken of uncertainties, methods used, nor is a thorough discussion of the projections presented here. This will be undertaken in the compilation and synthesis of the second national communications. The purpose of the notes is to give some background information, which may be essential for the understanding of the figures as presented in the table.

**Belgium:** The projection given in table B.1 is based on a scenario with "implemented measures". In addition, Belgium provided two other projections scenarios, one "without measures" and one with "measures under consideration". The "without measures" scenario projects $CO_2$ emissions to be 129,300 Gg in the year 2000, while the "measures under consideration" scenario leads to 116,300 Gg $CO_2$ emissions in the year 2000. Belgium also provided long-term projections for energy sector related emissions.

**Finland:** The range of emissions as given in the table reflects two scenarios, one being the energy market scenario (EMS) without national or international measures to curb $CO_2$ emissions, and the other one, the "energy policy scenario" (EPO), which assumes strengthening current control measures. Two different types of strengthening the control measures are examined within the EPO scenario, one in which the use of wood and gas is increased, and one in which more nuclear power is built.

**Germany:** The scenario presented in table B.1 is the "with-measures scenario"/"IWG-measures scenario" where $CO_2$-reduction measures are taken into account to the greatest possible extent. In addition, a "without-measures scenario"/"reference scenario" was presented where efficiency improvements are the main factor that counter increases in $CO_2$ emissions. The latter leads to a reduction of $CO_2$ emissions by 3% instead of 12 % under the scenario reported in the table.

**The Netherlands:** The "favourable $CO_2$ scenario", which is presented in the table, is according to the Dutch second national communication the scenario which is "more-or-less consistent with the present policy goal" (p.75). This scenario is subdivided into two other scenarios, the "favourable-high" and the "favourable-low" scenario, which refer to different levels of resulting energy demand. In addition, a "trend-scenario" was developed that "can be considered as an existing-policy scenario" (p.75). This scenario leads to stabilisation of $CO_2$ emissions in the year 2000 with respect to the base level used in the projection.

**New Zealand:** The "with measure" scenario as presented in the table is estimated to reduce the growth in energy-related $CO_2$ emissions by about 21.5% below the "business-as-usual" scenario.

**Norway:** The emission projections presented in the table are based on a variant of the "Reference Alternative" scenario based on current policies. In addition, a "baseline reference scenario" was developed, which assumes stabilization of global $CO_2$ emissions at 1990 levels by means of a global $CO_2$ tax.

**Sweden:** Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.

**Switzerland:** The projection for the year 2000 as given in the table results from a scenario with "implemented measures". Bunker fuel emissions were deducted from the total $CO_2$ emission level. A second scenario was developed with "measures under consideration". Under this scenario, a 10% reduction of emissions would be reached as compared to the 3% reduction under the "implemented measures" scenario.

**The United Kingdom:** Land-use change and forestry were deducted from the summary $CO_2$ figure.

* All references in the parentheses are to the national communications.

**Table C.2. $CO_2$ projections in land-use change and forestry until 2020[a] (Gigagrams)**

| | Base level (1990) | | Last reported inventory[c] | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2000 | | 2005 | | 2010 | | 2020 | |
| | Inventory (Gg) | Projection[b] (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Finland[d] | (-31 000)-(-19 000) | -24 500 | (-13 000)-(-7 000) | (-17 000)-(-12 000) | (31)-(52) | | | (-15 000)-(-22 000) | (39)-(11) | (-27 000)-(+1 000) | (-10)-(-100) |
| Ireland | -5 160 | -5 160 | -6 230 | -7 580 | -47 | -8 630 | 67 | -9 690 | 88 | | |
| Netherlands | -1 500 | -1 500 | -1 700 | -1 700 | -13 | -1 700 | -13 | -1 700 | -13 | -1 700 | -13 |
| New Zealand | -20 569 | -20 569 | -13 490 | -18 944 | 8 | -20 807 | -1 | -21 208 | -3 | -31 654 | -54 |
| Norway | -9 400 | -9 400 | -13 637 | -11 000 | 17 | -12 200 | 30 | -13 400 | 43 | -12 800 | 36 |
| Sweden[e] | -34 368 | -34 000 | NR | -29 000 | 15 | -26 000 | 24 | -22 000 | 35 | | |
| Switzerland | -4 360 | -4 360 | -5 100 | -5 100 | -17 | -5 100 | -17 | -5 100 | -17 | -5 100 | -17 |
| UK | 20 240 | 20 600 | 12 540 | 11 100 | -46 | 6 900 | -57 | 8 700 | -58 | | |

[a] Negative values in Gg denote removal of $CO_2$. Positive values denote a net source of emissions. Negative values in percentage denote more removals in 2000 than in 1990, or a decrease in net emissions.
[b] Differences in 1990 levels between inventories and projections are, for example, due to late revisions of inventories, rounding, or the fact that only a subset of the sources was projected.
[c] All parties reported their last inventory for 1995, with the exception of the United Kingdom which last inventory was reported for 1994.
[d] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.
[e] Deviation relative to the projection base level calculated on the basis of the mean of the range (-30 000)-(-19 000) Gg.

**Comments**

The emissions for land-use change and forestry in both Finland and the United Kingdom include emissions and uptakes from wetland drainage and peat extraction. The range of emissions given for Finland results from the two scenarios given in the national communication. New Zealand reported three different scenarios on the basis of different planting strategies. The "Central estimate of New Planting post 1997" is given in the table

**Table C.3. Projected anthropogenic emissions of $CH_4$ until 2020**

| | Base level (1990) | | Last reported inventory[a] | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2000 | | 2005 | | 2010 | | 2020 | |
| | Inventory (Gg) | Projection (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Canada | 3 200 | 3 148 | 3 732 | 3 546 | 13 | 3 600 | 14 | 3 719 | 18 | 4 179 | 33 |
| Finland | 246 | 246 | 241 | 226 | -8 | 206 | -16 | 191 | -22 | 179 | -27 |
| Germany | 5 682 | 5 682 | 4 788 | 3 892 | -32 | 3 004 | -47 | 2 759 | -51 | 2 505 | -56 |
| Ireland | 811 | 811 | 812 | 837 | 3 | 838 | 3 | 839 | 4 | | |
| Netherlands | 1 103 | 1 067 | 1 062 | 788 | -34 | 700 | -34 | 611 | -43 | 594 | -44 |
| New Zealand | 1 706 | 1 706 | 1 635 | 1 541 | -10 | 1 552 | 9 | 1 573 | -8 | 1 604 | -6 |
| Norway | 432 | 432 | 469 | 414 | -4 | 377 | -13 | 332 | -23 | 325 | -25 |
| Sweden[b] | 324 | 302 | 296 | 284 | -6 | 284 | -6 | 211 | -30 | 262 | -13 |
| Switzerland | 244 | 244 | 235 | 229 | -6 | 211 | -13 | 192 | -21 | | |
| UK | 4 402 | 4 402 | 3 843 | 3 418 | -22 | 3 227 | -27 | 2 852 | -35 | 2 670 | -39 |

[a] All parties reported their last inventory for 1995, with the exception of the United Kingdom which last inventory was reported for 1994.

[b] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.

**Table C.4. Projected anthropogenic emissions of $N_2O$ until 2020 (Gigagrams)**

| | Base level (1990) | | Last reported inventory[a] | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inventory | Projection | | 2000 | | 2005 | | 2010 | | 2020 | |
| | (Gg) | (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Canada | 86.0 | 86.0 | 107.8 | 74.0 | -14 | 77.1 | -10 | 81.1 | -6 | 88.3 | 3 |
| Finland | 18.0 | 18.0 | 18.0 | 21.5 | 19 | 23 - 25 | 28 - 38 | 24 - 25 | 33 - 39 | 23 - 26 | 28 - 44 |
| Germany | 226.0 | 226.0 | 210.0 | 162.0 | -28 | 159.0 | -30 | 157.0 | -31 | 156.0 | -31 |
| Ireland | 29.4 | 29.4 | 26.0 | 26.0 | -12 | 26.0 | -12 | 26.0 | -12 | | |
| Netherlands | 51.2 | 62.6 | 58.5 | 65.2 | 4 | 67.0 | 7 | 68.1 | 9 | 70.1 | 12 |
| New Zealand | 47.5 | 47.5 | 46.7 | 46.0 | -3 | 45.6 | -4 | 45.7 | -4 | 45.7 | -4 |
| Norway | 15.0 | 15.3 | 14.0 | 16.0 | 5 | 16.5 | 8 | 16.9 | 11 | 17.7 | 16 |
| Sweden[b] | 9.2 | 9.3 | 9.2 | 9.3 | 1 | 10.5 | 13 | 11.5 | 24 | 12.7 | 37 |
| Switzerland | 11.5 | 11.5 | 11.8 | 11.7 | 2 | 11.6 | 1 | 11.3 | 2 | | |
| UK | 112.5 | 111.7 | 93.7 | 42.9 | -62 | 48.3 | -57 | 50.8 | -55 | 53.3 | -53 |

[a] All parties reported their last inventory for 1995, with the exception of the United Kingdom which last inventory was reported for 1994.

[b] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.

**Table C.5.1. Projected emissions of HFCs until 2020[a] (Gigagrams, $CO_2$ equivalent)[b]**

| | Base level (1990) | | Last reported inventory[d] | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inventory | Projection[c] | | 2000 | | 2005 | | 2010 | | 2020 | |
| | (Gg) | (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Canada | | 500 | 500 | 2000 | 300 | 4000 | 700 | 7000 | 1 300 | 14 000 | 2 700 |
| Finland | | 79 | | 130 | 65 | 156 | 97 | 195 | 145 | 195 | 145 |
| Germany | 260 | 260 | 2 878 | 6 336 | 2 337 | 10 388 | 3 895 | 12 609 | 4 750 | 12 355 | 4 652 |
| Netherlands | 4 911 | 4 880 | 8 453 | 4 763 | -2 | 5 767 | 18 | 8 964 | 84 | 16 119 | 230 |
| New Zealand | | 183 | 183 | 213 | 16 | 247 | 35 | 287 | 57 | 583 | 219 |
| Norway | | 200 | 200 | 800 | 300 | 1 300 | 550 | 1 600 | 700 | 1 900 | 850 |
| Sweden | | 200 | 200 | 800 | 300 | 900 | 350 | 900 | 350 | | |
| UK | 1 366 | 1 366 | 2 051 | 2 390 | 75 | (2 095 - 3 771) | (53 - 176) | (2 263 - 4 578) | (66 - 235) | | |

[a] Finland, Germany, New Zealand and the United Kingdom only reported aggregated data for HFC. The secretariat therefore assumed that all these emissions were HFC-134a. Finland, New Zealand and Sweden used 1995 as base level for the HFC projections.

[b] Australia, Italy and the USA reported emissions based on 1994 GWPs, as given in their first national communications, whilst all other parties presented in the table reported on the basis of 1995 GWPs as given in their second national communications. The assumed time-horizon = 100 years.

[c] The figures are rounded.

[d] All parties reported their last inventory for 1995, with the exception of the United Kingdom which last inventory was reported for 1994.

**Comment**

With the exception of Canada, the Netherlands and the United Kingdom, parties did not express clearly whether emissions for other greenhouse gases reported included also potential emissions or only actual emissions.

**Table C.5.2. Projected emissions of PFCs until 2020[a] (Gigagrams, $CO_2$ equivalent)[b]**

| | Base level (1990) | | | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inventory | Projection[c] | Last reported inventory[d] | 2000 | | 2005 | | 2010 | | 2020 | |
| | (Gg) | (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Canada | 5 936 | 7 144 | 6 019 | 7 420 | 4 | 7 420 | 4 | 7 420 | 4 | 7 420 | 4 |
| Finland | | 271 | | 339 | 25 | 339 | 150 | 677 | 150 | 677 | 150 |
| Germany | 2 694 | 2 694 | 1 665 | 799 | -70 | 784 | -71 | 784 | -71 | 784 | -71 |
| Netherlands | 2 459 | 2 234 | 2 391 | 2 512 | 12 | 2 640 | 18 | 2 776 | 24 | 3 033 | 36 |
| New Zealand | 601 | 601 | 196 | 230 | -62 | 237 | -61 | 237 | -61 | 251 | -58 |
| Norway | 2 545 | 2 500 | 1 441 | 1 300 | -48 | 1 200 | -52 | 1 200 | -52 | 1 200 | -52 |
| Sweden | 400 | 400 | 390 | 500 | 25 | 500 | 25 | 600 | 50 | | |
| UK | 2 085 | 2 085 | 474 | 575 | -72 | 745 | -64 | 894 | -57 | | |

[a] Finland, New Zealand and the United Kingdom reported only aggregated PFC figures. In order to estimate the CQ equivalent, the secretariat assumed that approximately 90 per cent was $CF_4$ and 10 per cent was $C_2F_6$. Finland and Sweden used 1995 as base level for the PFC projections.

[b] Australia, Italy and the USA reported emissions based on 1994 GWPs, as given in their first national communications, whilst all other parties presented in the table reported on the basis of 1995 GWPs as given in their second national communications. The assumed time-horizon = 100 years.

[c] The figures are rounded.

[d] All parties reported their last inventory for 1995, with the exception of the United Kingdom which last inventory was reported for 1994.

**Table C.5.3. Projected emissions of $SF_6$ until 2020[a] (Gigagrams $CO_2$ equivalent)[b]**

| | Base level (1990) | | Last reported inventory[d] | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Inventory | Projection[c] | | 2000 | | 2005 | | 2010 | | 2020 | |
| | (Gg) | (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Canada | 2 868 | 2 868 | 1 888 | 1 912 | -33 | 1 912 | -33 | 1 912 | -33 | 1 912 | -33 |
| Finland | | 96 | | 120 | 25 | 143 | 49 | 143 | 49 | 143 | 49 |
| Germany | 3 896 | 3 896 | 5 999 | 4 971 | 28 | 4 445 | 14 | 5 401 | 39 | 6 979 | 79 |
| Netherlands | 1 386 | 1 386 | 1 458 | 1 625 | 17 | 1 793 | 29 | 1 960 | 41 | 2 271 | 64 |
| New Zealand | 550 | 550 | 4 374 | 5 067 | 821 | 5 879 | 969 | 6 812 | 1 139 | 9 154 | 1 564 |
| Norway | 2 200 | 2 200 | 574 | 525 | -76 | 525 | -76 | 600 | -72 | 700 | -68 |
| Sweden | 956 | 1 000 | 1 243 | 1 200 | 20 | 1 200 | 20 | 1 200 | 20 | | |
| UK | 574 | 574 | 621 | 1 028 | 79 | 1 028 | 79 | 1 052 | 83 | | |

[a] Finland, New Zealand and Sweden used 1995 as base level for the $SF_6$ projections.

[b] Australia, Italy and the USA reported emissions based on 1994 GWPs, as given in their first national communications, whilst all other parties presented in the table reported on the basis of 1995 GWPs as given in their second national communications. The assumed time-horizon = 100 years.

[c] The figures are rounded.

[d] All parties reported their last inventory for 1995, with the exception of the United Kingdom which last inventory was reported for 1994.

**Table C.6. Projected anthropogenic emissions of all greenhouse gases, excluding land-use change and forestry until 2020[a] (Gigagrams, $CO_2$ equivalent)[b]**

| | Base level (1990) | | Last reported inventory[d] | Projection and percentage deviation relative to the projection base level, base year = 100 per cent | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2000 | | 2005 | | 2010 | | 2020 | |
| | Inventory (Gg) | Projection[c] (Gg) | (Gg) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) | (Gg) | (%) |
| Canada | 566 664 | 566 480 | 619 723 | 609 118 | 8 | 635 513 | 12 | 669 252 | 8 | 766 544 | 35 |
| Finland | 64 546 | 65 546 | 67 137 | 70 000 | 9 | | | 68 466 -68 576 | 6 | 60 904 -61 824 | (-6) - (-4) |
| Germany | 1 210 387 | 1 210 232 | 1 070 691 | 1 038 058 | -14 | 994 991 | -18 | 979 403 | -19 | 968 083 | -20 |
| Ireland | 56 864 | 56 864 | 59 043 | 60 625 | 7 | 64 486 | 13 | 66 454 | 17 | | |
| Netherlands | 215 341 | 223 313 | 236 139 | 213 660 | -4 | 215 670 | -3 | 217 642 | -3 | 225 628 | 1 |
| New Zealand | 77 184 | 77 178 | 80 932 | 83 211 | 8 | 86 661 | 12 | 90 784 | 18 | 101 399 | 31 |
| Norway | 54 011 | 54 515 | 54 284 | 60 279 | 11 | 63 057 | 16 | 63 611 | 17 | 62 112 | 14 |
| Sweden[e] | 66 457 | 68 225 | 69 009 | 71 447 | 5 | 73 919 | 8 | 74 996 | 10 | 90 439 | 33 |
| Switzerland | 53 759 | 55 789 | 53 806 | 52 336 | -6 | 52 727 | -6 | 53 235 | -5 | | |
| UK | 711 579 | 711 094 | 664 470 | 639 072 | -10 | 679 608 | -4 | 674 849 | -5 | 754 593 | 6 |

[a] Figures from tables C.1, C.3, C.4, C.5.1, C.5.2, and C.5.3 have been used as the starting point for these projections. Only gases and sources that were projected are included.

[b] Using 1995 GWPs, time-horizon = 100 years.

[c] Differences in 1990 levels between inventories and projections are, for example, due to revisions of inventories, rounding, and temperature adjustments for the projection base level (Netherlands, Sweden and Switzerland).

[d] All parties reported their last inventory for 1995, with the exception of the United Kingdom which last inventory was reported for 1994.

[e] Sweden reported 1995 rather than 1990 as the base level for projections. All variations from the base level are thus given in relation to 1995.